DOCUMENT RESUME

ED 259 151 CE 041 840

TITLE	Histologic Technician. Laboratory Occupations Cluster.
INSTITUTION	Michigan State Univ., East Lansing. Coll. of Agriculture and Natural Resources Education Inst.
SPONS AGENCY	Michigan State Dept. of Education, Lansing. Vocational-Technical Education Service.
PUB DATE	85
NOTE	173p.; For a related document, see CE 041 841.
AVAILABLE FROM	Michigan Vocational Education Resource Center, 133 Erickson Hall, Michigan State University, East Lansing, MI 48824-1034.
PUB TYPE	Guides - Classroom Use - Guides (For Teachers) (052)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Allied Health Occupations; *Allied Health Occupations Education; Curriculum Guides; Evaluation Criteria; *Job Search Methods; Job Skills; *Laboratory Procedures; Laboratory Safety; *Laboratory Technology; Learning Activities; *Medical Laboratory Assistants; Occupational Information; Secondary Education
IDENTIFIERS	*Histology

ABSTRACT

This task-based curriculum guide for histologic technician is intended to help the teacher develop a classroom management system where students learn by doing. Introductory materials include a Dictionary of Occupational Titles job code and title sheet, a career ladder, a matrix relating duty/task numbers to job titles, and a task list. Each task is then outlined in this format: statement of duty, statement of task, duty and task numbers, a checklist of achievement indicators, a statement of the criteria for achievement of competence, specification of required tools and equipment and resources, and lists of teacher activities and student learning activities. The tasks are categorized by 10 duties: employing laboratory safety procedures, using basic laboratory skills, performing clerical duties, performing quality control procedures, processing tissue specimens, using microtomy techniques, performing staining procedures, performing cyto-prep duties, performing autopsy assistant duties, and using employability skills. Other contents include student and class achievement records, tool/equipment lists, a bibliography, and Board of Registry information provided by the American Society of Clinical Pathologists. (YLB)

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INTRODUCTION

This curriculum was developed through a grant awarded to the Department of Agricultural and Extension Education (AEE), College of Agriculture and Natural Resources, Michigan State University by the Vocational-Technical Education Service of the Michigan Department of Education (V-TES/MDE). While development of the curriculum was the responsibility of AEE, every attempt was made to involve people representing education and industry. The final curriculum is representative of the tasks health care workers perform on the job.

The credit for this curriculum belongs to (1) the V-TES/MDE consultant responsible for the program area; (2) two task force leaders hired to do the writing representing secondary and post-secondary educational institutions; (3) a number of individuals from business, industry, and education who reviewed task statements, achievement indicators, and criteria statements to determine their relevancy to tasks performed by health care workers on their jobs in the world of work; and (4) the project coordinator from AEE.

The following describes the role of each of those credited above in developing the curriculum.

1. The V-TES/MDE curriculum consultant provided overall guidance for the project. This responsibility included nominating the task force leader, the task force members and working with AEE staff to determine the direction for the final curriculum.

2. The task force leaders were responsible for all the writing activities. These persons drew upon their professional expertise and other resources to develop the curriculum.

3. A task force composed of representatives of education, business and industry reviewed the curriculum and suggested appropriate changes. The final curriculum is the result of the close cooperation between the task force leader and the members of the task force.

4. The project coordinator in AEE was responsible for developing the format of the curriculum, working with the task force leader to ensure the quality of the curriculum, as well as that the final curriculum was produced on schedule. The work of the project coordinator was made considerably easier because of the close collaboration of the V-TES/MDE curriculum consultant. This whole effort was a partnership and could not have been completed without this arrangement.

Finally, the secretaries and other support staff who typed and proofread the final product cannot be overlooked. Without their assistance this effort would never have been completed.

It is intended by all those involved in the development of this curriculum that it always be used to provide relevant training for entry to the world of work. It is hoped that this curriculum is used to that end.

The curriculum guide is representative of the occupational job duty categories which list major activities and tasks performed on an entry level job. The curriculum guide contains a resource list and criteria statements which indicate the minimum standards of performance accepted as evidence of competence in completion of the task by the health care industry. This is a task-based curriculum guide which helps a teacher develop a classroom management system where students learn by doing. It is based on task analysis and reflects the skills, knowledge, and attitudes that employers expect incumbent workers to possess.

The Michigan Department of Education, Vocational-Technical Education Service has adopted descriptions and codes for vocational-technical education programs found in the document entitled, "A Classification of Instructional Programs" (C.I.P.), National Center for Educational Statistics, February, 1981. This new coding system is required of all states in report-

ing data on all programs receiving funds under P.L. 94-482, the Vocational Education Amendments of 1976.

The United States Office of Education (U.S.O.E.) coding system was discontinued at the conclusion of the 1981-82 school year.

The C.I.P. code system for the Allied Health Occupations programs begins with 17.00 - The C.I.P. Code for curriculum tasks included in this curriculum guide is 17.0300, Course II.

The Health Occupations Students of America (HOSA) is the official student organization for students enrolled in vocationally reimbursed Health Occupations programs. The Michigan Association of Health Occupations Students of America provides opportunities for students to develop leadership, occupational, and social skills through involvement at the local, state, and national levels. HOSA activities are conducted as an integral part of the Health Occupations programs. Many of the tasks outlined in this guide are included in the skills competition conducted by HOSA at the regional, state, and national levels.

The following persons were instrumental in the development of this curriculum.

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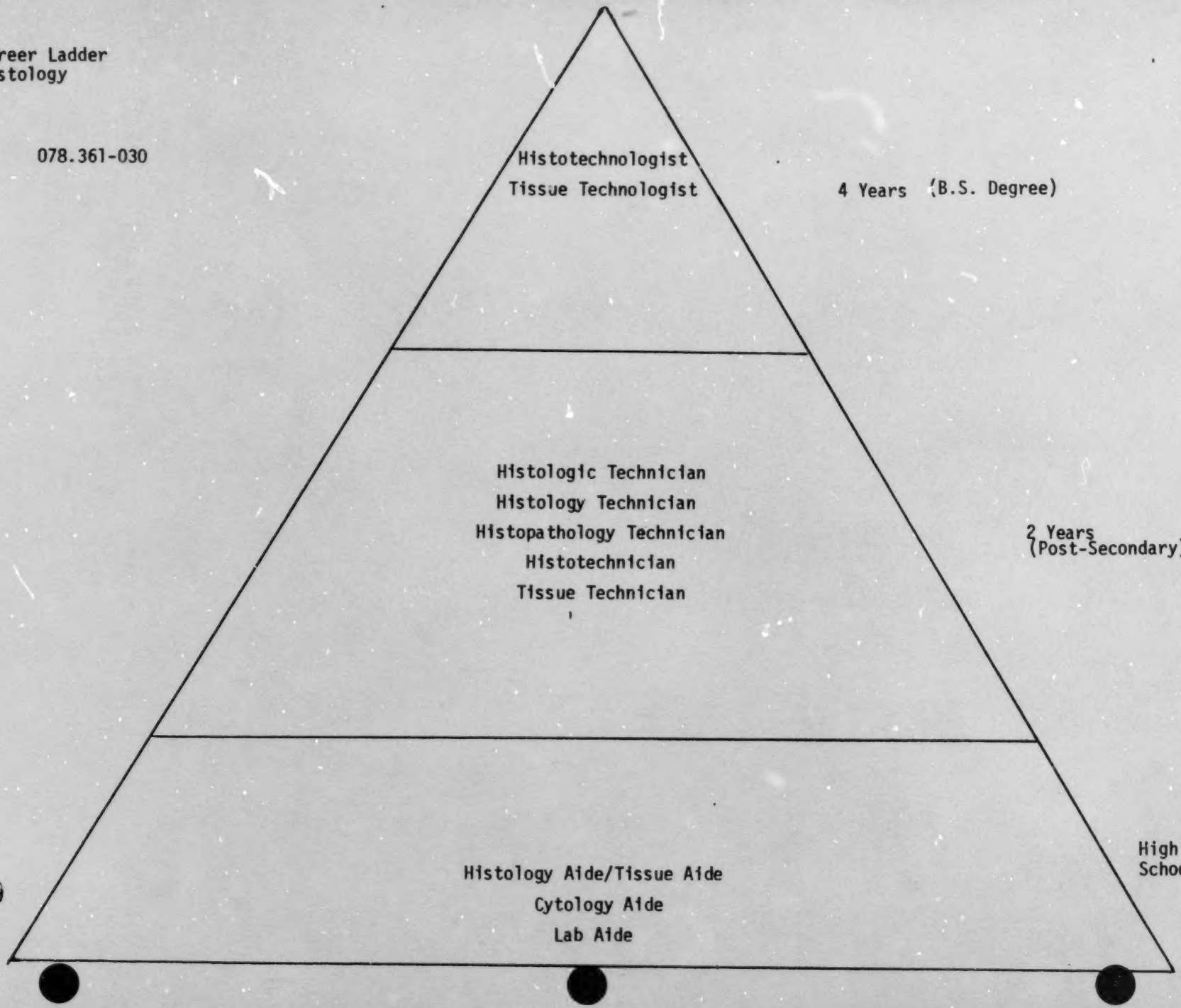
D.O.T. JOB CODE AND TITLE SHEET

HISTOLOGY

D.O.T. NUMBER	JOB TITLE	ASCP CERTIFICATION TITLE
078.361-030	Tissue Technologist	H.T.L. (ASCP) Histotechnologist
	Histologic Technician	H.T. (ASCP) Histologic Technician
	Histotechnologist Histology Technician Histopathology Technician Histology Aide Histotechnician Tissue Technician Tissue Aide Lab Aide Cytology Aide	

Career Ladder
Histology

078.361-030



DUTY/TASK - JOB MATRIX

DUTY/TASK NUMBERS	JOB TITLES	Tissue Technologist	Histo Technologist	Histologic Technician	Tissue Technician	Histology Aide	Cytology Aide
A 1		X	X	X	X	X	X
2		X	X	X	X	X	X
3		X	X	X	X	X	X
4		X	X	X	X	X	X
5		X	X	X	X	X	X
6		X	X	X	X	X	X
B 1		X	X	X	X	X	
2		X	X	X	X	X	
3		X	X	X	X		
4		X	X	X	X	X	
5		X	X	X	X	X	
6		X	X	X	X	X	
7		X	X	X	X		
8		X	X	X	X		
9		X	X	X	X		
10		X	X	X	X	X	
11		X	X	X	X	X	
12		X	X	X	X		

DUTY/TASK NUMBERS

JOB TITLES	B 13	B 14	C 1	C 2	C 3	C 4	C 5	C 6	D 1	D 2	D 3	D 4	D 5	E 1	E 2	E 3
Tissue Technologist	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Histo Technologist	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Histologic Technician	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tissue Technician	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Histology Aide			X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cytology Aide			X	X	X			X		X	X					

DUTY/TASK - JOB MATRIX

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NATIONAL INSTITUTE OF EDUCATION
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DUTY/TASK - JOB MATRIX

DUTY/TASK NUMBERS	JOB TITLES	Tissue Technologist	Histo Technologist	Histologic Technician	Tissue Technician	Histology Aide	Cytology Aide
E 4		X	X	X	X		
5		X	X	X	X		
F 1		X	X	X	X		
2		X	X	X	X		
3		X	X	X	X		
4		X	X	X	X		
5		X	X	X	X		
G 1		X	X	X	X		
2		X	X	X	X		
3		X	X	X	X		
4		X	X	X	X		
5		X	X	X	X		
6		X	X	X	X		
7		X	X	X	X		
8		X	X	X	X		
9		X	X	X	X		
10		X	X	X	X		

DUTY/TASK NUMBERS

JOB TITLES	11	12	13		H 1	2	3	4	5	6	7	8		I 1	2	3	4	5	6
Tissue Technologist	x	x	x		x	x	x	x	x	x	x	x		x	x	x	x	x	x
Histo Technologist	x	x	x		x	x	x	x	x	x	x	x		x	x	x	x	x	x
Histologic Technician	x	x	x		x	x	x	x	x	x	x	x		x	x	x	x	x	x
Tissue Technician	x	x	x		x	x	x	x	x	x	x	x		x	x	x	x	x	x
Histology Aide					x	x	x	x	x	x	x	x		x	x	x	x	x	x
Cytology Aide					x	x	x	x	x	x	x	x							

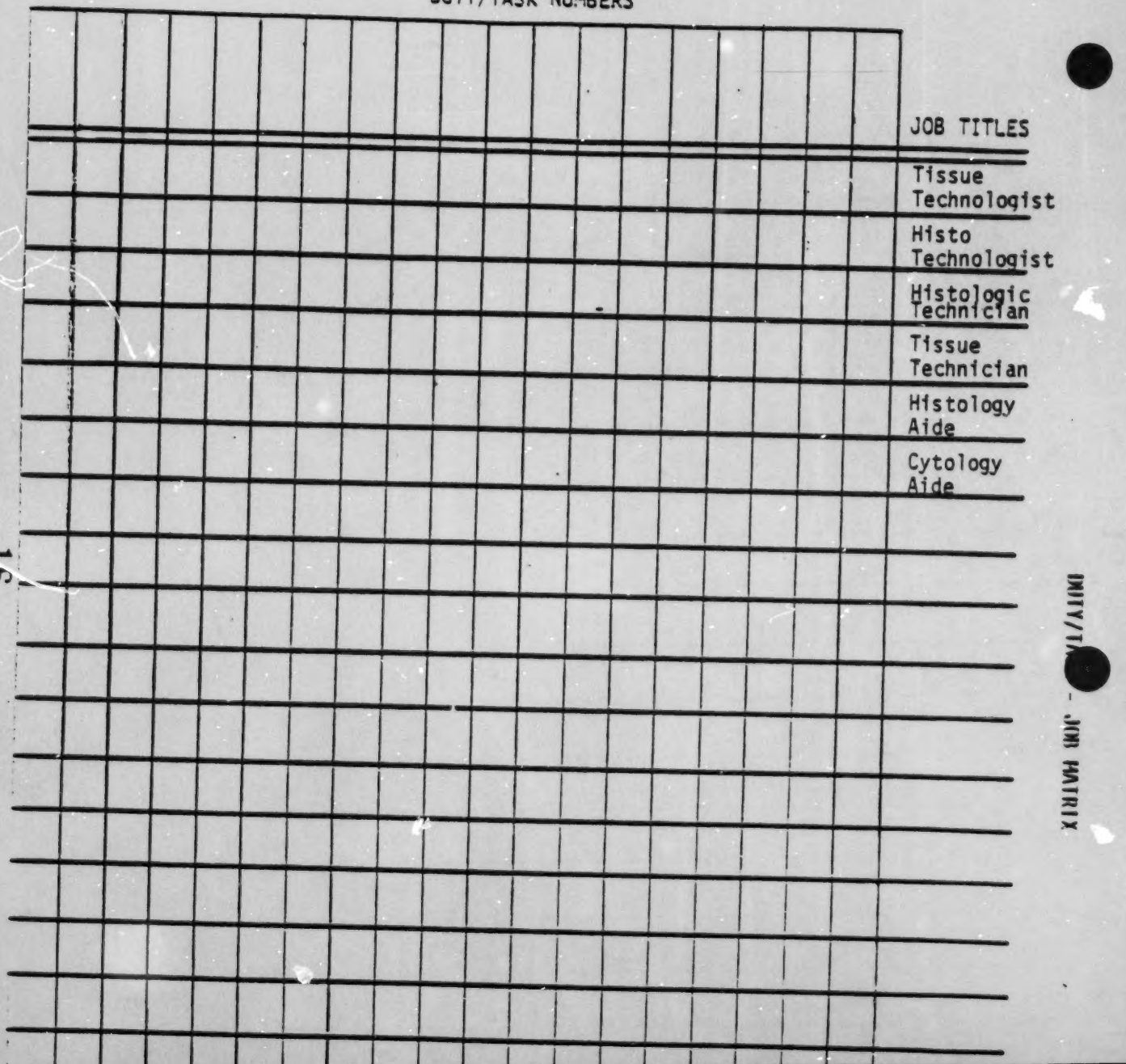
DUTY/TASK - JOB MATRIX

DUTY/TASK - JOB MATRIX

13
DUTY/TASK NUMBERS

J	JOB TITLES	Tissue Technologist	Histo Technologist	Histologic Technician	Tissue Technician	Histology Aide	Cytology Aide
1		X	X	X	X	X	X
2		X	X	X	X	X	X
3		X	X	X	X	X	X
4		X	X	X	X	X	X
5		X	X	X	X	X	X
6		X	X	X	X	X	X
7		X	X	X	X	X	X
8		X	X	X	X	X	X
9		X	X	X	X	X	X
10		X	X	X	X	X	X
11		X	X	X	X	X	X
12		X	X	X	X	X	X
13		X	X	X	X	X	X
14		X	X	X	X	X	X
15		X	X	X	X	X	X
16		X	X	X	X	X	X
17		X	X	X	X	X	X
18		X	X	X	X	X	X
19		X	X	X	X	X	X

DUTY/TASK NUMBERS



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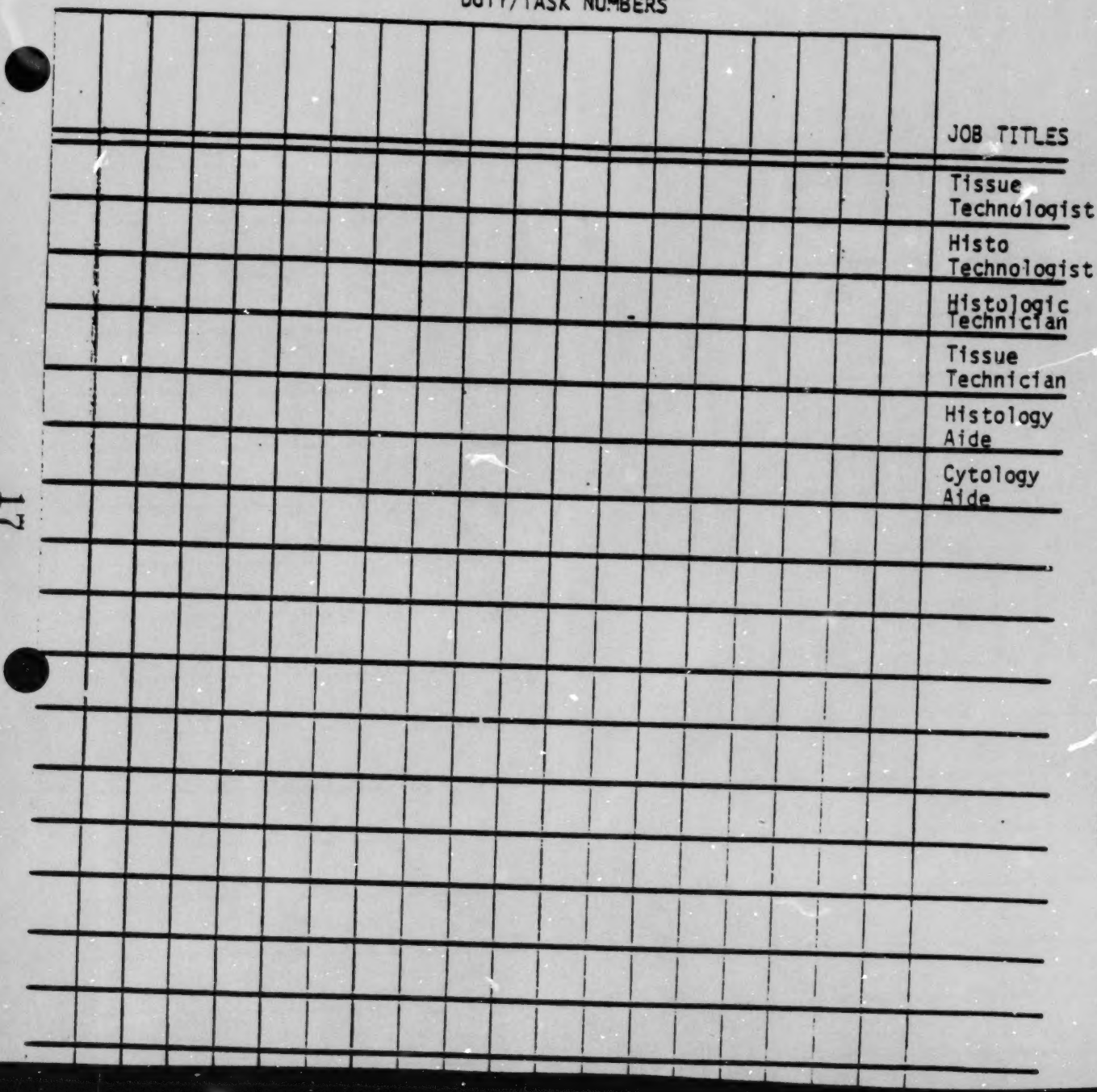

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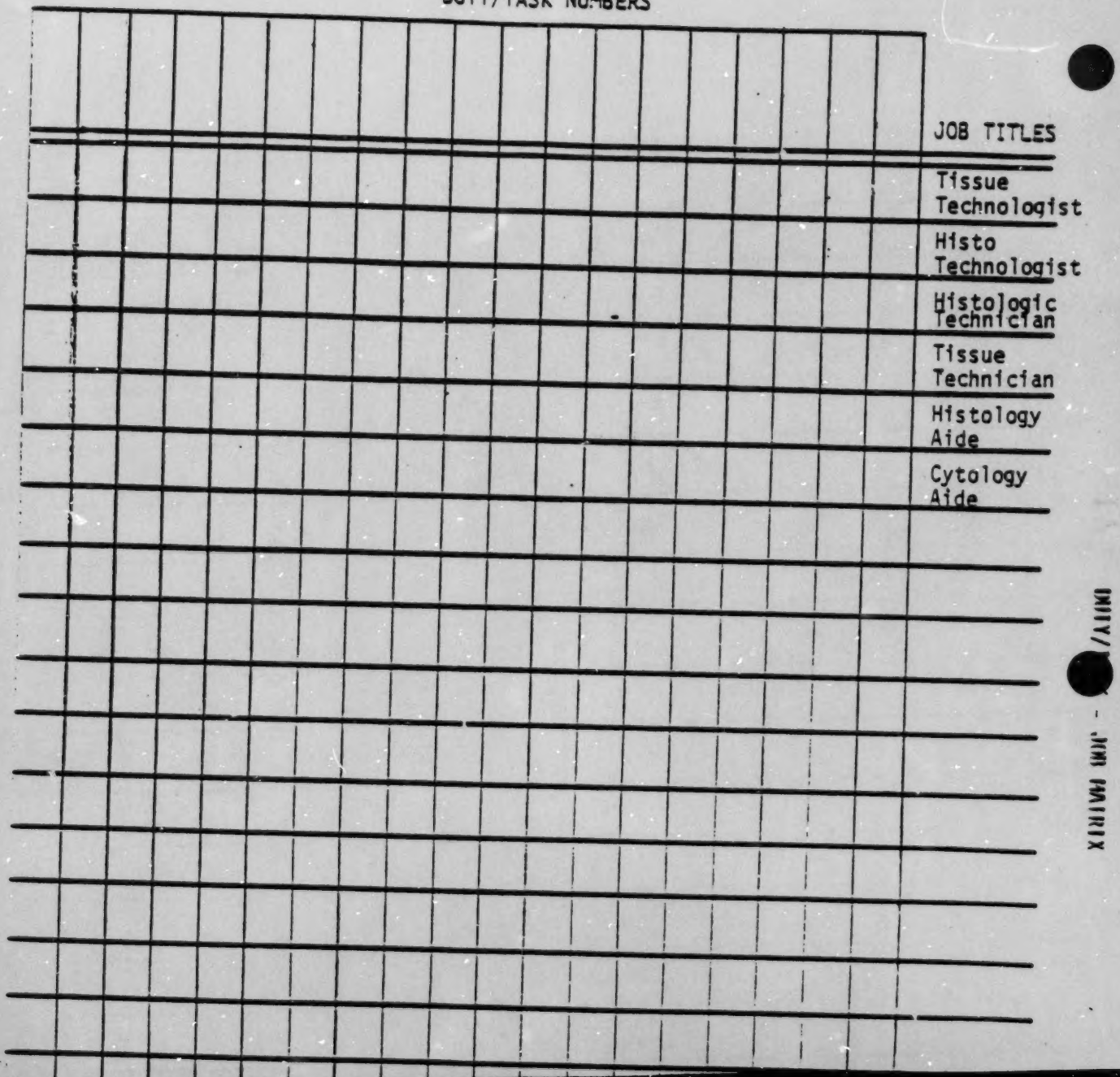
DUTY/TASK - JOB MATRIX

DUTY/TASK NUMBERS



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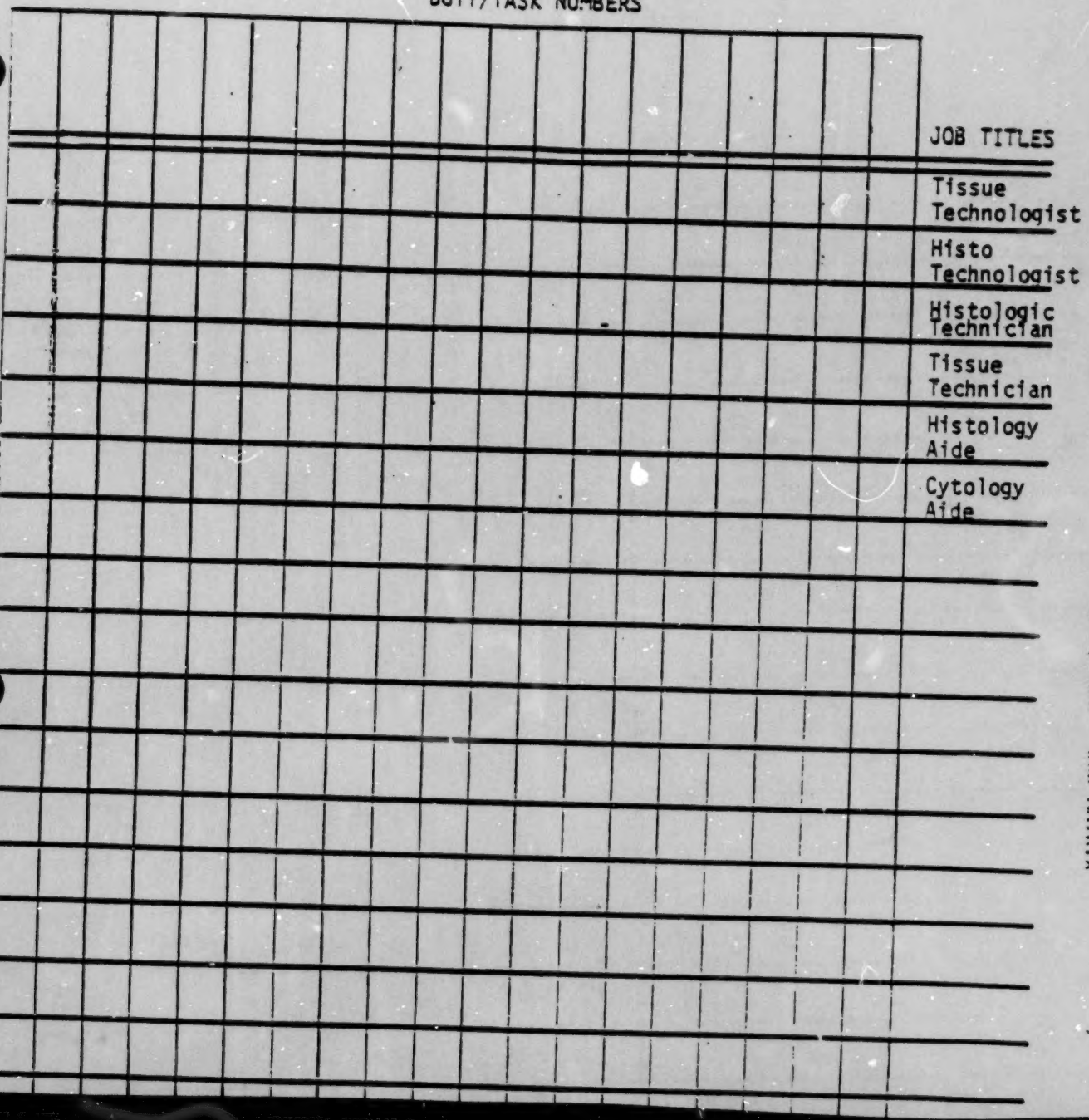
DUTY/TASK NUMBERS



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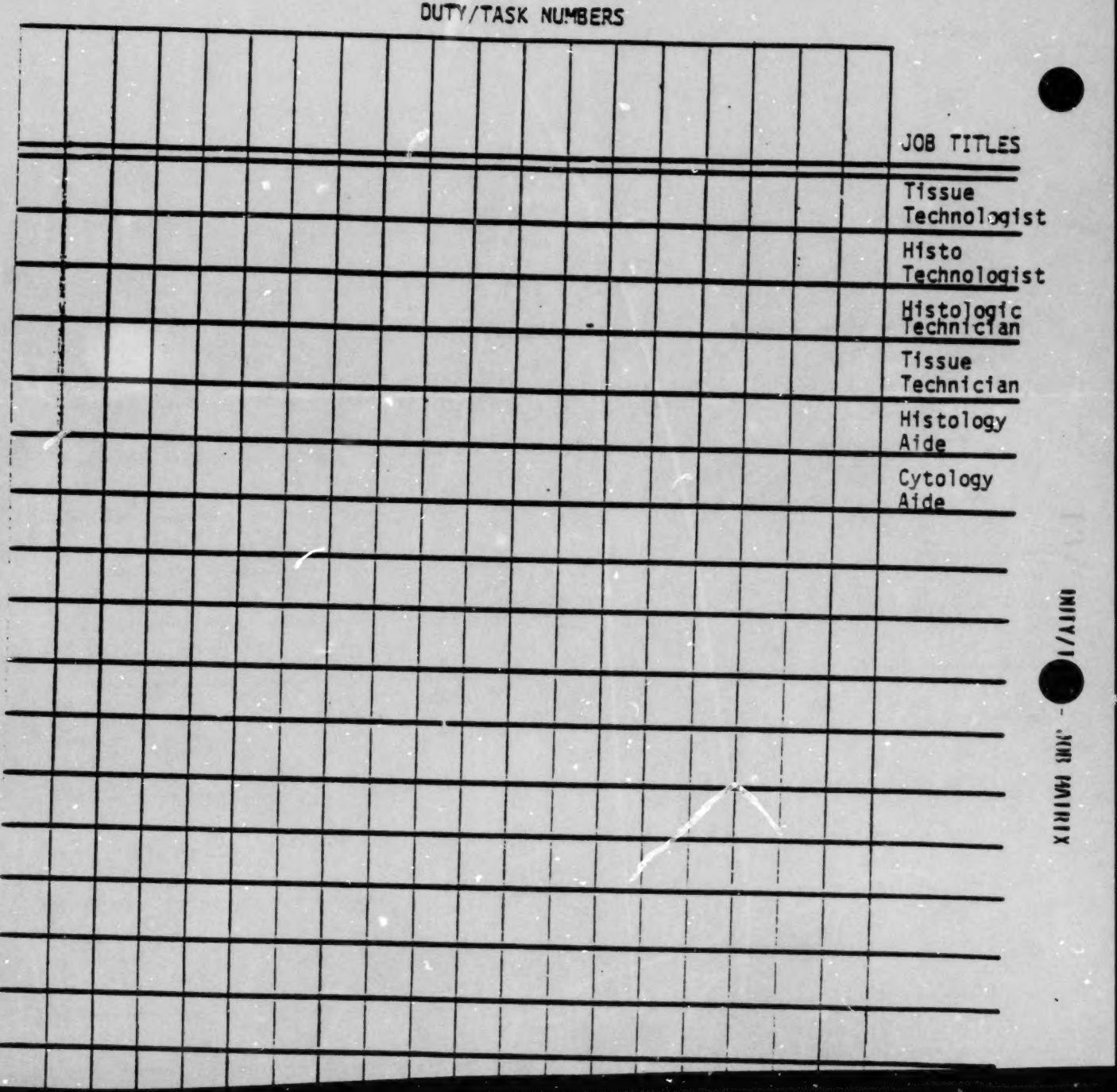
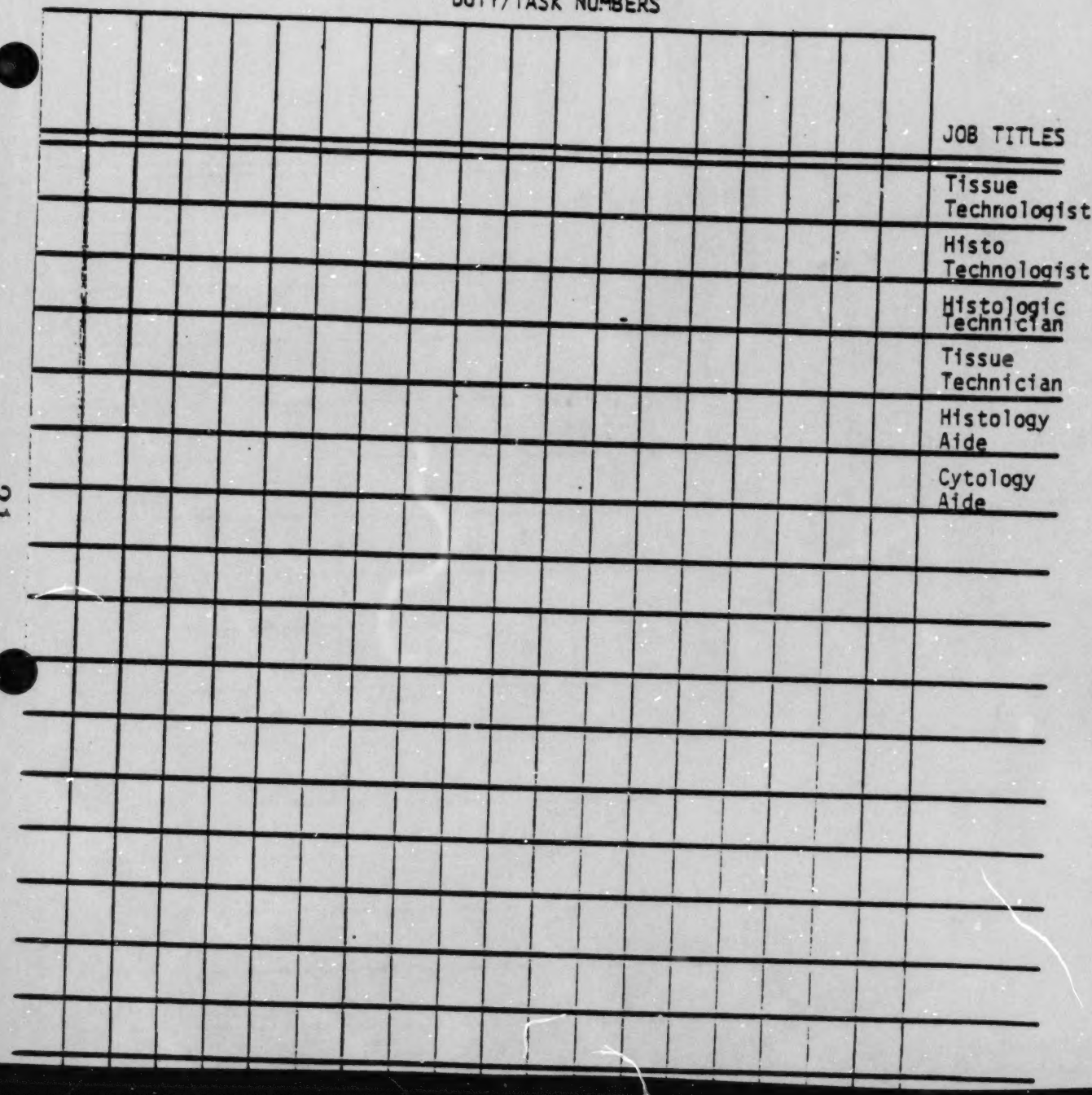

DUTY/TASK NUMBERS
JOB TITLES
Tissue Technologist
Histo Technologist
Histologic Technician
Tissue Technician
Histology Aide
Cytology Aide
20
DUTY/TASK MATRIX

DUTY/TASK NUMBERS



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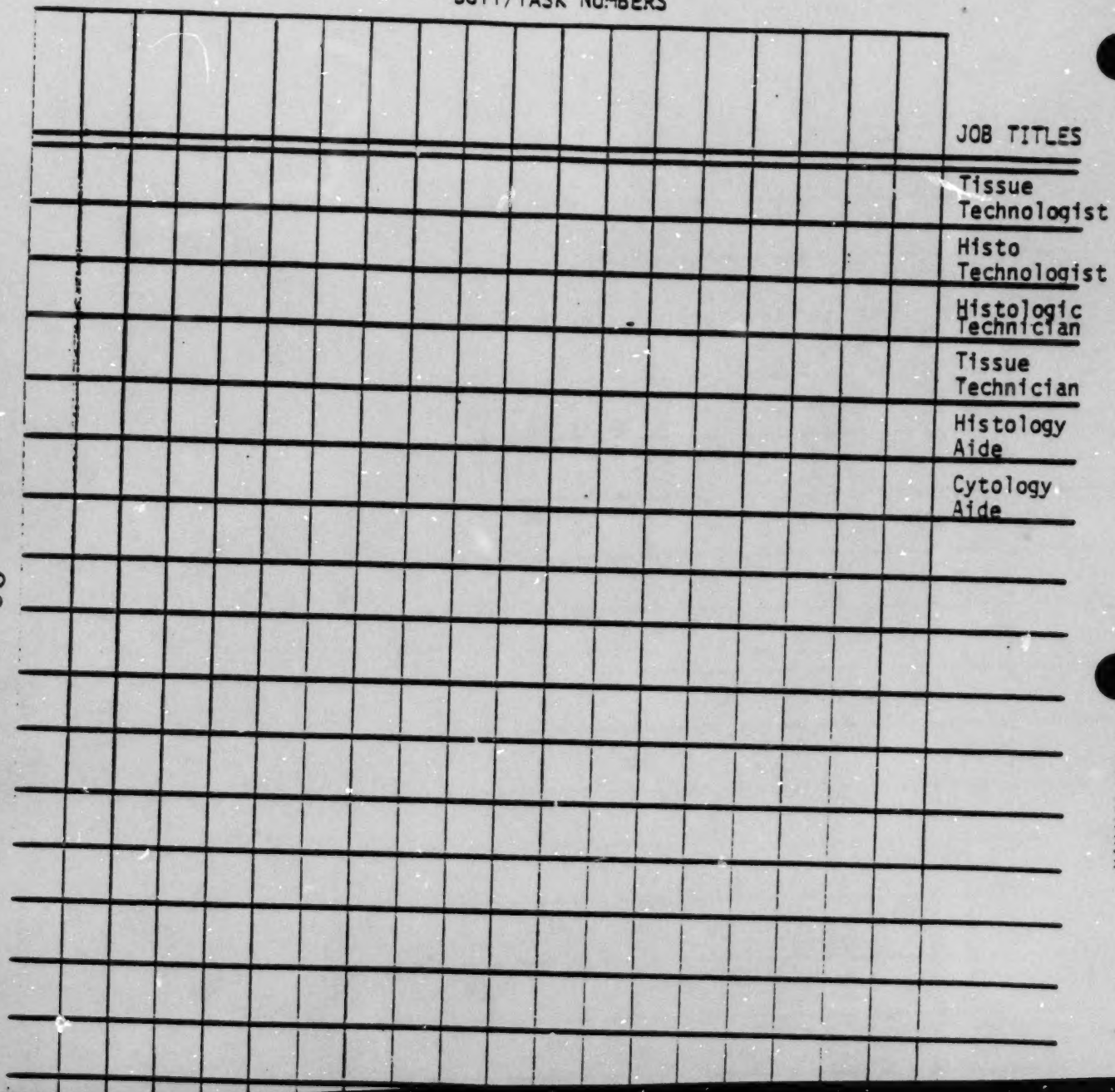
DUTY/TASK NUMBERS



UNIVERSITY MICROFILMS INC. ANN ARBOR

TASK LIST
FOR
HISTOLOGIC TECHNICIAN

A. EMPLOYING LABORATORY SAFETY PROCEDURES

1. Choose safety supplies, using a knowledge of laboratory task, to ensure personal protection
2. Use safety equipment, using a knowledge of safety procedures, to provide personal/environmental protection.
3. Follow precautions, using a knowledge of safety procedures, to handle hazardous reagents.
4. Follow precautions, using a knowledge of safety procedures, to handle hot materials.
5. Follow precautions, using a knowledge of safety procedures, to handle sharp objects and/or broken glass.
6. Follow precautions, using a knowledge of safety procedures, to prevent contamination.
7. Store chemicals, using a knowledge of safety procedures, to provide personal/environmental protection.
8. Dispose of waste chemicals, using a knowledge of safety procedures, to provide personal/environmental protection.

B. USING BASIC LABORATORY SKILLS

1. Clean laboratory glassware, using appropriate cleaning materials and techniques, to ensure reliable results.
2. Choose laboratory glassware, using a knowledge of function, to perform laboratory procedures.
3. Perform basic calculations, using a knowledge of laboratory mathematics, to determine quantities required.
4. Weigh out chemical reagents, using laboratory balances, to prepare solutions.
5. Measure volume, using laboratory glassware, to prepare solutions.
6. Mix chemical reagents, using standard laboratory equipment, to prepare various types of solutions.
7. Measure length, using a metric ruler, to obtain size or dimension information.
8. Identify pH properties, using commercial pH indicator paper, to determine the acid/base levels of a solution.

B. USING BASIC LABORATORY SKILLS (continued)

9. Identify pH properties, using a pH meter, to determine the acid/base level of a solution.

10. Measure temperature, using a laboratory thermometer, to determine degree of heat.

11. Check alcohol reagents, using an alcohol hydrometer, to determine percentage of solution.

12. Use a compound microscope, using a knowledge of resolution, to examine specimen slides.

13. Clean a compound microscope lens system, using appropriate supplies, to obtain a clean image.

14. Focus an oil immersion lens, using a knowledge of refraction, to obtain maximum magnification.

C. PERFORMING CLERICAL DUTIES

1. Receive specimens, using a knowledge of required procedure, to channel specimens to appropriate laboratory.

2. Accession specimens, using a logbook/computer, to ensure correct identification.

3. Prepare specimens, using containers, to dispatch (specimens) to other facilities.

4. File tissue specimens, using numerical accuracy, to ensure retrieval.

5. Store/discard tissue specimens, using a standard operating procedure manual, to provide storage space.

6. Use telephone/intercom, using communication skills, to relay information.

7. Record/maintain inventory of supplies, using a knowledge of consumables, to ensure adequate stock.

8. Maintains a work load recording system(s), using a log sheet, to comply with accredation requirements.

D. PERFORMING QUALITY CONTROL PROCEDURES

1. Record information, using a tissue specimen record sheet, to ensure accuracy.

2. Print/type information, using labels, to provide accurate identification.

D. PERFORMING QUALITY CONTROL PROCEDURES (continued)

3. Record performance of preventive maintenance procedures, using record books, to assure reliable function of equipment.

4. Monitor equipment, using instruments, to ensure accurate performance.

5. Perform staining procedures, using control slides, to ensure their reliability and validity.

E. PROCESSING TISSUE SPECIMENS

1. Fix tissue specimens, using formalin or other fixative solution, to preserve cellular composition.

2. Set up gross dissection area, using supplies and equipment, to obtain tissue sample.

3. Process tissue samples, using an automatic tissue processor, to prepare specimens for embedding.

4. Embed tissue sample, using supplies and equipment, to obtain a paraffin block.

5. Decalcify tissue specimens using bone/teeth to prepare them for processing.

F. USING MICROTOMY TECHNIQUES

1. Sharpen a microtome knife, using a manual method, to obtain a sharp knife.

2. Operate the automatic knife sharpener, using equipment, to obtain a sharp microtome knife.

3. Cut paraffin tissue blocks, using a rotary microtome and knife, to obtain thin sections of tissue.

4. Set up flotation water bath, using equipment, to obtain wrinkle-free tissue section.

5. Set up slide drier/oven, using heat, to adhere tissue sections to slide.

6. Freeze/cut tissue samples, using cryostat and knife, to obtain sections.

G. PERFORMING STAINING PROCEDURES

1. Stain tissue sections, using solutions, to demonstrate nuclear and cytoplasmic components.

G. PERFORMING STAINING PROCEDURE (continued)

2. Coverslip tissue sections under a hood, using a synthetic mounting media, to make a permanent preparation.

3. Stain frozen tissue section, using a rapid stain procedure, to provide a section for immediate diagnosis.

4. Coverslip frozen tissue sections, using an aqueous mounting media, to make temporary/permanent preparation.

5. Stain tissue sections, using solutions, to demonstrate fats and lipids.

6. Stain tissue sections, using solutions, to demonstrate hematological elements.

7. Stain tissue sections, using solutions, to demonstrate pigments and minerals.

8. Stain tissue sections, using solutions, to demonstrate connective and muscle tissue.

9. Stain tissue sections, using solutions, to demonstrate carbohydrates.

10. Stain tissue sections, using solutions, to demonstrate microorganisms.

11. Stain tissue sections, using solutions, to demonstrate central nervous system tissue.

12. Stain tissue sections, using solutions, to demonstrate silver impregnation techniques.

13. Stain tissue sections, using solutions, to demonstrate special cells and cytoplasm inclusions.

H. PERFORMING CYTO-PREP DUTIES

1. Package requested cytology kits, using materials, to provide clinicians and nursing stations with needed supplies.

2. Accession cytology specimens, using a logbook/computer, to ensure correct identification.

3. File cytology slides, using numerical accuracy, to ensure retrieval.

4. Determine appropriate method of preparation for making smears, using a standard operating procedure manual, to ensure correct handling of specimen.

5. Prepare non-gynecological body fluids/secretions, using a standard operating procedure manual, to make a smear.

6. Prepare non-gynecological body fluids/secretions, using a centrifuge to make smears/cell blocks.

H. PERFORMING CYTO-PREP DUTIES (continued)

7. Prepare non-gynecological body fluids/secretions, using a membrane filter technique, to make a smear.

8. Stain gynecological/non-gynecological smears, using the Papanicolaou staining technique, to demonstrate nuclear and cytoplasmic components.

9. Coverslip gynecological and non-gynecological smears, using appropriate synthetic mounting media, to make permanent slide preparations.

I. PERFORMING AUTOPSY ASSISTANT DUTIES

1. Accession autopsy case, using a logbook/computer, to ensure correct identification.

2. Set up autopsy area, using instruments/equipment, to assist in post-mortem examination.

3. Provide appropriate instruments, using a knowledge of autopsy procedure, to assist in post-mortem examination.

4. Weigh/record specimens, using a balance, to ensure accurate measurement.

5. Collect autopsy specimens, using a standard operating procedures manual, to deliver to the appropriate laboratory.

6. Clean morgue area, using supplies, to ensure a hygenic environment.

J. USING EMPLOYABILITY SKILLS

1. Perform a self-assessment, using knowledge and information, to compile a list of personal attributes.

2. Perform a self-assessment, using knowledge and information, to identify areas of work that will provide personal job satisfaction.

3. Perform a self-assessment, using knowledge and information, to determine methods to reduce levels of stress.

4. Compile an occupational profile, using reference materials, to determine the characteristics, requirements, and employment outlook of an occupation.

5. Investigate non-wage job characteristics, using available resources, to identify significant job factors.

6. Develop goals, using knowledge, to determine career objective(s).

7. Perform a job search, using information, to identify employment opportunities.

8. Participate in an information interview, using knowledge and resources, to obtain information about a job from an employer.

9. Complete a social security form, using information, to apply for a social security number.

10. Contact an employer, using a telephone, to pursue potential employment opportunities.

11. Complete a job application, using personal notes, to apply for employment.

12. Prepare a resume, using personal information, to apply for a job.

13. Write a letter, using personal notes, to apply for a position.

14. Demonstrate appropriate dress, using a knowledge of job requirements, to comply with standards of on-the-job attire and grooming.

15. Interview for a job, using communication skills, to secure employment.

16. Contact a job interviewer, using a telephone, to accept/reject a job.

17. Complete forms, using information, to withhold city, state, and federal taxes.

18. Describe performance evaluation measurements, using knowledge, to identify behavior/attitudes that employers expect employees to exhibit on-the-job.

19. Perform a continuing education program search, using available resources, to identify opportunities for retraining, skills upgrading, and career advancement.

20. Analyze career information, using available resources, to identify the opportunities for advancement that exist within an occupation.

21. Describe job resignation/dismissal practice, using knowledge, to identify positive methods for terminating an employment situation.

Duty: Employing Laboratory Safety Procedures	**Duty No.** A
	Task No. 1

Task: Choose safety supplies, using a knowledge of laboratory task, to ensure personal protection.

Achievement Indicators: The learner:	Yes	No
1. Read laboratory safety procedures and precautions related to personal protection -	____	____
2. Demonstrated the use of the following laboratory safety supplies:		
a. Lab Coat - for protection of clothing -	____	____
b. Safety Eye Goggles/Glasses - for protection against splashes -	____	____
c. Rubber Apron - for protection against acids/ bases -	____	____
d. Surgical Gloves - for protection against contamination -	____	____
e. Metal Tongs, "Hot Hand", Asbestos Gloves, Folded Cloth Towel - for protection against hot objects -	____	____
f. Face mask - for protection against air borne contaiminants -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to departmental safety policies.

Tools and Equipment:	**Resources:**

Teacher Activities	Student Learning Activities
Review 1. Review concept of good safety practices. 2. Discuss examples of personal safety equipment used in everyday living. Presentation 1. Lecture "Use of Personal Laboratory Safety Equipment". 2. List personal laboratory safety equipment. 3. Demonstrate the use of personal laboratory safety equipment. Summary 1. Review laboratory safety procedure.	Exercise 1. Read assigned resources and reference on laboratory safety. 2. Record lecture notes. 3. Discuss laboratory safety procedures. 4. Demonstrate the correct use of personal laboratory safety equipment.

Duty: Employing Laboratory Safety Procedures	**Duty No.** A
	Task No. 2

Task: Use safety equipment, using a knowledge of safety procedures, to provide personal/environmental protection.

Achievement Indicators: The learner:	Yes	No
1. Read laboratory safety procedures on the correct use of laboratory safety equipment -	____	____
2. Demonstrated the use of the following laboratory safety equipment:		
a. Fume Hood - for use with hazardous reagents -	____	____
b. Safety Eyewash - for use in eye related accidents -	____	____
c. Safety Shower - for use in caustic burns -	____	____
d. Fire Extinguisher - for use in room fires -	____	____
e. Fire Blanket - for use in personnel fires -	____	____
f. Flame Proof Storage Cabinet - for storage of flammable reagents -	____	____
g. Explosion Proof Refrigerator - for storage of explosive reagents -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to departmental safety policies.

Tools and Equipment:	**Resources:**

Duty: Employing Laboratory Safety Procedures	**Duty No.** A
	Task No. 3

Task: Follow precautions, using a knowledge of safety procedures, to handle hazardous reagents.

Achievement Indicators: The learner:

	Yes	No
1. Identified various types of hazardous reagents -	____	____
2. Wore safety eyegoggles/glasses -	____	____
3. Wore rubber apron when handling acids/bases -	____	____
4. Used fume hood when working with hazardous reagents -	____	____
5. Kept flammable reagents away from open flame -	____	____
6. Cleaned up acid/base spills -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to departmental safety policies.

Tools and Equipment:	**Resources:**

Duty: Employing Laboratory Safety Procedures	**Duty No.** A
	Task No. 4

Task: Follow precautions, using a knowledge of safety procedures, to handle hot materials.

Achievement Indicators: The learner:

	Yes	No
1. Identified the correct procedure wher handling hot materials -	____	____
2. Demonstrated the correct use of the hot plate -	____	____
3. Demonstrated the safe use of the gas burner -	____	____
4. Handled hot glassware using the following equipment:		
a. Metal tongs -	____	____
b. "Hot Hand" -	____	____
c. Asbestos gloves -	____	____
d. Folded cloth towel -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to departmental safety policies.

Tools and Equipment:	**Resources:**

Duty: Employing Laboratory Safety Procedures	**Duty No.** A
	Task No. 5

Task: Follow precautions, using a knowledge of safety procedures, to handle sharp objects.

Achievement Indicators: The learner:	Yes	No
1. Attached scalpel blade/razor blade to handle in a safe manner -	____	____
2. Removed scalpel blade/razor blade from handle in a safe manner -	____	____
3. Disposed scalpel blade/razor blade in designated receptacle -	____	____
4. Transported microtome knife in its box to work area -	____	____
5. Handled microtome knife with care -	____	____
6. Cleaned microtome knife wiping toward knife edge -	____	____
7. Used knife guard on microtome knife when sectioning -	____	____
8. Disposed broken glassware in designated receptacle -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to departmental safety policies.

Tools and Equipment:	**Resources:**

Duty: Employing Laboratory Safety Procedures	**Duty No.** A
	Task No. 6

Task: Follow precautions, using a knowledge of safety procedures, to prevent contamination.

Achievement Indicators: The learner:	Yes	No
1. Read instructions on the correct procedure to handle bio-hazard materials -	____	____
2. Identified potential bio-hazards -	____	____
3. Wore protective clothing -	____	____
4. Handled potential bio-hazards with surgical gloves -	____	____
5. Employed extended fixation time on suspected bio-hazardous specimens -	____	____
6. Disposed contaminated linens in labeled bio-hazard bag -	____	____
7. Autoclaved contaminated glassware -	____	____
8. Disinfected contaminated laboratory countertops and equipment -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to departmental safety policies.

Tools and Equipment:	**Resources:**

Duty: Employing Laboratory Safety Procedures	**Duty No.** A
	Task No. 7

Task: Store chemicals, using a knowledge of chemical safety procedures, to provide personal/environmental protection.

Achievement Indicators: The learner:	Yes	No
1. Identified chemical to be stored -	____	____
2. Wrote health and safety information about the chemical on 3 X 5 cards, from reference manual -	____	____
3. Wrote which chemical classification (inorganic, organic, Oxidizer, acids, etc.) describes the chemical -	____	____
4. Put the chemical in the cupboard used to store that class of chemical -	____	____
5. Handed in written material to instructor -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:**
	Flinn Scientific Catalog - CACC Chemical Handbook

Duty: Employing Laboratory Safety Procedures	**Duty No.** A
	Task No. 8

Task: Dispose of waste chemicals, using a knowledge of chemical safety procedures, to provide personal/environmental protection.

Achievement Indicators: The learner:	Yes	No
1. Identified chemical to be disposed of -	____	____
2. Wrote health and safety information about the chemical from reference materials -	____	____
3. Wrote health and safety information about the chemical from the label on the chemical container -	____	____
4. Filled out a waste chemical form using the written information -	____	____
5. Put waste chemical in an approved container with the waste chemical form attached -	____	____
6. Called maintenance to remove container -	____	____
7. Cleaned up work area -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are sucessfully performed according to the instructions.

Tools and Equipment:	**Resources:**
	Flinn Scientific, Inc. Catalog Waste Chemical form

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 1

Task: Clean laboratory glassware, using appropriate cleaning materials and techniques, to ensure reliable results.

Achievement Indicators: The learner:	Yes	No
1. Read instructions on the correct procedure to chemically clean laboratory glassware -	____	____
2. Chose appropriate detergent and supplies -	____	____
3. Rinsed laboratory glassware -	____	____
4. Washed laboratory glassware in detergent solution using appropriate brush -	____	____
5. Rinsed laboratory glassware with hot tap water -	____	____
6. Rinsed laboratory glassware with distilled water -	____	____
7. Rinsed laboratory glassware with chemical solution if appropriate -	____	____
8. Rinsed laboratory glassware thoroughly if using chemical solution -	____	____
9. Placed laboratory glassware on rack to dry -	____	____
10. Returned laboratory glassware to their storage cabinet -	____	____
11. Cleaned up sink and countertops -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to standard operating procedure manual.

Tools and Equipment:	**Resources:**

Teacher Activities	Student Learning Activities
Review 1. Discuss necessity to use clean glassware. 2. Review identification of laboratory glassware. Presentation 1. List steps in procedure for chemically cleaning laboratory glassware. 2. Demonstrate correct procedure. 3. List purpose of using chemically clean glassware. Summary 1. Review procedure to chemically clean laboratory glassware.	Exercise 1. Read assigned resources and reference materials on procedure to chemically clean laboratory glassware. 2. Review steps to chemically clean laboratory glassware. 3. Demonstrate procedure to chemically clean laboratory glassware. 4. List purpose for using chemically clean glassware.

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 2

Task: Choose laboratory glassware, using a knowledge of function, to perform laboratory procedures.

Achievement Indicators: The learner:

	Yes	No
1. Identified laboratory glassware, listing proper name, purpose and capacity -	____	____
2. Identified laboratory glassware which are heat resistant -	____	____
3. Explained the meanings of markings and abbreviations on glassware -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the supervisor.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 3

Task: Perform basic calculations, using a knowledge of laboratory mathematics, to determine quantities required.

Achievement Indicators: The learner:	Yes	No
1. Identified three units of metric measurement and commonly used prefixes -	____	____
2. Explained the conversion factors within the metric system -	____	____
3. Calculated the quantities required for the following solutions:		
a. Liquid/liquid percent solution -	____	____
b. Liquid/solid percent solution -	____	____
c. Normal solution -	____	____
d. Molar solution -	____	____
4. Calculated the ratio for increasing/decreasing total volume of solutions -	____	____
5. Calculated the ratio required for diluting solutions -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to a laboratory mathematic manual.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 4

Task: Weigh out chemical reagents, using laboratory balances, to prepare solutions.

Achievement Indicators: The learner:	Yes	No
1. Used appropriate weighing instrument:		
a. Triple Beam Balance -	____	____
b. Double Pan Balance -	____	____
c. Digital Balance -	____	____
d. Analytical Balance -	____	____
2. Placed balance on level surface and used tare adjustment knob if needed -	____	____
3. Used weigh boat/paper -	____	____
4. Read label accurately to ensure correct selection of chemical reagent -	____	____
5. Demonstrated the correct method of transferring a dry reagent from the container to the balance -	____	____
6. Completed weighing chemical reagent, obtaining accurate measurement -	____	____
7. Cleaned balance, resetting scale to zero -	____	____
8. Cleaned work area and returned supplies and equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the supervisor.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 5

Task: Measure volume, using laboratory glassware, to prepare solutions.

Achievement Indicators: The learner:	Yes	No
1. Use the appropriate laboratory glassware:		
a. Pipette -	____	____
b. Graduated cylinder -	____	____
c. Volumetric flask -	____	____
2. Identified types of pipettes -	____	____
3. Read label accurately to ensure correct selection of liquid reagent -	____	____
4. Used distilled/deionized water for aqueous solutions -	____	____
5. Used pipetting devices to transfer liquid reagents -	____	____
6. Measured liquid reagents using appropriate sized glassware -	____	____
7. Demonstrated knowledge of meniscus -	____	____
8. Measured liquid reagents using volumetric flasks -	____	____
9. Demonstrated the correct method of pouring a liquid from one container to another -	____	____
10. Cleaned up work area and returned supplies to appropriate cabinets -	____	____

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Criteria:	Competence in the task will be recognized when the achievement indicators are successfully performed according to the supervisor.
Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 6

Task: Mix chemical reagents, using standard laboratory equipment, to prepare various types of solutions.

Achievement Indicators: The learner:	Yes	No
1. Used appropriate laboratory glassware:		
a. Beaker -	____	____
b. Erlenmeyer flask -	____	____
c. Florence flask -	____	____
2. Observed special handling procedure for chemicals:		
a. Employed fume hood when necessary -	____	____
b. Added acid/base to water -	____	____
c. Used personal safety equipment -	____	____
3. Prepared the following solutions:		
a. Liquid/liquid percent solution -	____	____
b. Liquid/solid percent solution -	____	____
c. Normal solution -	____	____
d. Molar solution -	____	____
4. Mixed solutions using appropriate laboratory glassware -	____	____
5. Used magnetic stirrer as needed -	____	____
6. Used hot plate as needed -	____	____
7. Selected appropriate reagent bottle for storage -	____	____
8. Labeled reagent bottle:		
a. Contents and concentration -	____	____
b. Date of preparation -	____	____
c. Precautions for use or disposal -	____	____
d. Temperature of storage -	____	____
e. Initials of preparer -	____	____

	Yes	No
f. Expiration date (if known) -	____	____
9. Stored prepared solutions to maintain shelf-life stability correctly -	____	____
10. Cleaned work area and returned supplied/equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the supervisor.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 7

Task: Measure length, using a metric ruler, to obtain size or dimension information.

Achievement Indicators: The learner:	Yes	No
1. Demonstrated knowledge of metric units using a metric ruler -	____	____
2. Measured various specified lengths using a metric ruler -	____	____
3. Trimmed tissue specimens to recommended dimensions of 10mm x 15mm x 3mm -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the supervisor.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 8

Task: Identify pH properties, using commercial pH indicator paper, to determine the acid/base levels of a solution.

Achievement Indicators: The learner:	Yes	No
1. Read instructions on the correct use of commercial pH indicator paper -	____	____
2. Removed approximately one inch paper strips from container -	____	____
3. Placed strips in specified solutions -	____	____
4. Compared color on test strips with color chart -	____	____
5. Recorded pH measurement as indicated on color chart -	____	____
6. Cleaned up work area and returned supplies/equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to manufacturer's instructions.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 9

Task: Identify pH properties, using a pH meter, to determine the acid/base level of a solution.

Achievement Indicators: The learner:	Yes	No
1. Reviewed instructions from operator's manual -	____	____
2. Plugged in pH meter, allowing for warm-up period -	____	____
3. Set temperature dial at room temperature -	____	____
4. Checked electrode for correct level of filling solution -	____	____
5. Rinsed electrode in distilled water - blotted dry -	____	____
6. Placed electrode in standard buffer solution -	____	____
7. Standardized pH meter -	____	____
8. Rinsed electrode in distilled water - blotted dry -	____	____
9. Placed electrode in solution to be tested -	____	____
10. Read and recorded pH measurement -	____	____
11. Rinsed electrode in distilled water - blotted dry -	____	____
12. Stored electrode according to manufacturer directions -	____	____
13. Cleaned up work area and returned supplies/ equipment to appropriate cabinets -	____	____

Criteria:	Competence in the task will be recognized when the achievement indicators are successfully performed according to the operator's manual.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 10

Task: Measure temperature, using a laboratory thermometer, to determine degree of heat.

Achievement Indicators: The learner:	Yes	No
1. Demonstrated knowledge of Celsius/Farenheit temperature scales -	____	____
2. Converted specified Farenheit temperatures to Celsius -	____	____
3. Identified various types of laboratory thermometers -	____	____
4. Demonstrated correct care and use of laboratory thermometer -	____	____
5. Measured temperature of specified items -	____	____
6. Cleaned up work area -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the procedure manual.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 11

Task: Check alcohol reagents, using an alcohol hydrometer, to determine percentage of solution.

Achievement Indicators: The learner:	Yes	No
1. Demonstrated knowledge of purpose of alcohol hydrometer -	____	____
2. Selected Traille scale to determine percentage of alcohol concentration -	____	____
3. Measured alcohol concentration on specified samples -	____	____
4. Cleaned up work area and returned supplies/ equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the procedure manual.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 12

Task: Use a compound microscope, using a knowledge of resolution, to examine specimen slides.

Achievement Indicators: The learner:	Yes	No
1. Read instructions on operators manual -	____	____
2. Used correct procedure for transporting microscope -	____	____
3. Plugged in microscope to electric outlet -	____	____
4. Rotated low power objective into working position -	____	____
5. Placed slide on (mechanical) stage -	____	____
6. Adjusted oculars -	____	____
7. Focused slide using coarse adjustment -	____	____
8. Focused slide using fine adjustment -	____	____
9. Focused slide using left ocular -	____	____
10. Adjusted diaphram as needed -	____	____
11. Adjusted condenser lens as needed -	____	____
12. Adjusted centering screws on sub-stage as needed	____	____
13. Observed slide using medium and high power objectives -	____	____
14. Returned low power objective into working position -	____	____
15. Lowered stage and turned off light source -	____	____
16. Removed slide from stage -	____	____
17. Covered microscope with protective case -	____	____
18. Cleaned up work area and returned supplies/ equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the procedure manual.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 13

Task: Clean a compound microscope lens system, using appropriate supplies, to obtain a clean image.

Achievement Indicators: The learner:	Yes	No
1. Read instructions on cleaning procedure -	____	____
2. Obtained necessary supplies and equipment -	____	____
3. Used air syringe/aerosol to remove dust and lint particles from lens -	____	____
4. Used clean camel hair brush to remove dust particles from lens -	____	____
5. Used lens paper to clean lens system -	____	____
6. Checked for cleanliness by focusing on a slide using each ocular separately and rotating through each objective. If lens is not completely cleaned, follow steps 7 and 8 -	____	____
7. Moistened cotton-tipped applicator stick with a small amount of lens cleaner -	____	____
8. Gently cleaned lens system with cotton-tipped applicator stick -	____	____
9. Cleaned up work area -	____	____
10. Returned supplies and equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the manufacturer's recommendations.

Tools and Equipment:	**Resources:**

Duty: Using Basic Laboratory Skills	**Duty No.** B
	Task No. 14

Task: Focus an oil immersion lens, using a knowledge of refraction, to obtain maximum magnification.

Achievement Indicators: The learner:	Yes	No
1. Read instructions on how to use an oil immersion lens -	____	____
2. Obtained necessary supplies and equipment -	____	____
3. Plugged in microscope to electric outlet -	____	____
4. Obtained the maximum amount of light by opening condenser lens to maximum -	____	____
5. Placed slide on the mechanical stage -	____	____
6. Focused slide using coarse and fine adjustment -	____	____
7. Rotated high power objective away from slide -	____	____
8. Placed a drop of immersion oil on slide -	____	____
9. Rotated oil immersion lens into place -	____	____
10. Adjusted stage, allowing oil immersion lens to make contact with oil droplet -	____	____
11. Focused slide using fine adjustment -	____	____
12. Observed slide specimen -	____	____
13. Rotated oil immersion lens away from slide -	____	____
14. Returned noise piece to 10x objective -	____	____
15. Lowered stage -	____	____
16. Turned off light source -	____	____
17. Removed slide from mechanical stage -	____	____
18. Cleaned oil immersion lens with cotton-tipped applicator stick moistened with lens cleaner -	____	____
19. Dried oil immersion lens with lens paper -	____	____
20. Covered microscope with protective case -	____	____
21. Cleaned work area -	____	____

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	Yes	No
22. Returned supplies and equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achivement indicators are successfully performed according to the manufacturer's recommendation.

Tools and Equipment:	**Resources:**

Duty: Performing Clerical Duties	**Duty No.** C
	Task No. 1

Task: Receive specimens, using a knowledge of required procedure, to channel specimens to appropriate laboratory.

Achievement Indicators: The learner:

	Yes	No
1. Checked for discrepancies on the specimen container label and accompanying request slip -	____	____
2. Notified appropriate personnel if a discrepancy was noted -	____	____
3. Noted "Stat" or other special requests:		
a. Frozen sections -	____	____
b. Cytology specimens -	____	____
c. E. M. specimens -	____	____
d. Immunopathology specimens -	____	____
e. Microbiology specimens -	____	____
4. Expedited specimens to appropriate laboratory -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to supervisor.

Tools and Equipment:	**Resources:**

Teacher Activities	Student Learning Activities
Review 1. Review importance of labeling system. 2. Review interpersonal communication skills. Presentation 1. Describe and demonstrate the correct procedure for receiving and channeling specimens.	Exercise 1. Read reference and resource information. 2. Record lecture notes. 3. Observe demonstration. 4. Practice channeling specimens to appropriate areas. 5. Demonstrate a proficiency for this task.

Duty: Performing Clerical Duties	**Duty No.** C
	Task No. 2

Task: Accession specimens, using a logbook/computer, to ensure correct identification.

Achievement Indicators: The learner:

	Yes	No
1. Labeled tissue specimens with pathology accession number -	____	____
2. Recorded specimen information in logbook or computer -	____	____
3. Recorded appropriate charge -	____	____
4. Prepared specimens for gross dissection -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the laboratory guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Clerical Duties	**Duty No.** C
	Task No. 3

Task: Prepare specimens, using containers, to dispatch (specimens) to other facilities.

Achievement Indicators: The learner:	Yes	No
1. Accessioned specimen in logbook/computer -	____	____
2. Assembled appropriate packing material -	____	____
3. Labeled specimen with necessary information -	____	____
4. Filled out request slip for reference laboratory -	____	____
5. Followed appropriate procedure as indicated for type of specimen:		
a. Wet tissue (dry ice/appropriate fixative) -	____	____
b. Tissue blocks -	____	____
c. Tissue slides -	____	____
6. Identified outside container in a manner consistent with postal regulations -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Clerical Duties	**Duty No.** C
	Task No. 4

Task: File tissue specimens, using numerical accuracy, to ensure retrieval.

Achievement Indicators: The learner:	Yes	No
1. Arranged wet tissue in numerical order -	____	____
2. Placed wet tissue in appropriate storage area -	____	____
3. Arranged tissue blocks in numerical order -	____	____
4. Placed tissue blocks in appropriate storage containers -	____	____
5. Arranged slides in numerical order -	____	____
6. Recovered slipped slides with air bubbles -	____	____
7. Stored slides flat, temporarily, until thoroughly dry -	____	____
8. Transfered slides to permanent file drawers -	____	____
9. Labeled shelves/storage containers/file drawers to ensure easy retrival -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to laboratory guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Clerical Duties	**Duty No.** C
	Task No. 5

Task: Store/discard tissue specimens, using a standard operating procedure manual, to provide storage space.

Achievement Indicators: The learner:	Yes	No
1. Obtained old tissue specimens released for disposal -	____	____
2. Wore gloves and goggles for personal protection -	____	____
3. Disposed tissue specimens according to laboratory guidelines (garbage disposal/packaged for incineration) -	____	____
4. Removed all identification labels from specimen containers -	____	____
5. Followed appropriate procedure for cleaning specimen containers -	____	____
6. Cleaned work area -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to laboratory guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Clerical Duties	**Duty No.** C
	Task No. 6

Task: Use a telephone/intercom, using communication skills, to relay information.

Achievement Indicators: The learner:	Yes	No
1. Reviewed the use of various telephone/intercom systems -	____	____
2. Obtained paper and pencil for messages -	____	____
3. Operated dials/buttons on the telephone/intercom -	____	____
4. Stated name and institution/department -	____	____
5. Stated purpose of call -	____	____
6. Recorded message including date, time, name of person -	____	____
7. Signed name to message -	____	____
8. Spoke using correct grammar -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the supervisor.

Tools and Equipment:	**Resources:**

Duty: Performing Clerical Duties	**Duty No.** C
	Task No. 7

Task: Record/maintain inventory of supplies, using a knowledge of consumables, to ensure adequate stock.

Achievement Indicators: The learner:	Yes	No
1. Determined inventory of supplies on hand -	____	____
2. Determined consumption of reagents and disposable supplies over a specified time period -	____	____
3. Evaluated usual length of time lapse between placing orders and receiving supplies -	____	____
4. Filled out appropriate requisitions to bring stock item supplies to established levels -	____	____
5. Stored supplies according to manufacturer's recommendations -	____	____
6. Replenished stock, bringing forward oldest dated items to be used first, while discarding outdated items -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to laboratory guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Clerical Duties	**Duty No.** C
	Task No. 8

Task: Maintain a workload recording system(s), using a log sheet, to comply with accreditating requirements.

Achievement Indicators: The learner:	Yes	No
1. Counted and recorded on workload tally forms, using surgical log book, the total number of patient cases, daily -	____	____
2. Counted and recorded the total number of surgical and autopsy blocks cut and slides made, daily -	____	____
3. Counted and recorded the total number of frozen sections performed, daily -	____	____
4. Counted and recorded the total number of autopsies performed, daily -	____	____
5. Counted and recorded the total number of special stains and/or special procedures performed, daily -	____	____
6. Counted and recorded the total number of bone marrow and decalcified specimens, daily -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Quality Control Procedures	**Duty No.** D
	Task No. 1

Task: Record information, using a tissue specimen record sheet, to ensure accuracy.

Achievement Indicators: The learner:	Yes	No
1. Identified tissue specimen accession number -	____	____
2. Recorded accession number on tag cassette -	____	____
3. Recorded specimen information on the tissue specimen record sheet at the time of gross dissection:		
a. Date -	____	____
b. Pathology number -	____	____
c. Type of specimen -	____	____
d. Number of pieces submitted -	____	____
e. Number of cassettes -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Teacher Activities	Student Learning Activities
Review 1. Review concept of quality control and good laboratory practices. Presentation 1. Discuss the information necessary to record on the tissue specimen record sheet. 2. Provide a sample record sheet. Summary 1. Review importance of maintaining the identity of the specimen throughout the processing schedule. 2. Evaluate practical assignment.	Exercise 1. Read reference and resource information. 2. Record lecture notes. 3. Accurately record information on the tissue specimen record sheet. 4. Demonstrate proficiency on a practical examination.

Duty: Performing Quality Control Procedures	**Duty No.** D
	Task No. 2

Task: Print/type information, using labels, to provide accurate identification.

Achievement Indicators: The learner:	Yes	No
1. Described the importance of an accurate labeling system -	____	____
2. Prepared a slide label which could include the following information:		
a. Pathology accession number -	____	____
b. Source of specimen -	____	____
c. Type of fixative -	____	____
d. Type of stain -	____	____
e. Type of demonstration -	____	____
3. Prepared a solution label which could include the following information:		
a. Name of reagent -	____	____
b. Concentration -	____	____
c. Stock/working solution -	____	____
d. Date of preparation -	____	____
e. Date in use -	____	____
f. Date of expiration, if known -	____	____
g. Initials of technician -	____	____

Criteria:	Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Quality Control Procedures	**Duty No.** D
	Task No. 3

Task: Record performance of preventive maintenance procedures, using record books, to assure reliable function of equipment.

Achievement Indicators: The learner:	Yes	No
1. Followed established laboratory guidelines for periodic preventive maintenance on all laboratory equipment -	____	____
2. Completed equipment maintenance record sheet on all laboratory equipment -	____	____
3. Performed quality control procedures on all laboratory equipment as indicated on a daily, monthly or yearly basis -	____	____
4. Kept accurate records on all preventive and corrective maintenance -	____	____
5. Identified values which fell outside the correct range and documented corrective action procedures -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to quality control laboratory guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Quality Control Procedures | **Duty No.** D | **Task No.** 4

Task: Monitor equipment, using instruments, to ensure accurate performance.

Achievement Indicators: The learner:	Yes	No
1. Described the purpose of laboratory thermometer -	____	____
2. Checked and recorded temperature range daily on the following equipment:		
a. Paraffin baths -	____	____
b. Paraffin dispensers -	____	____
c. Flotation water baths -	____	____
d. Oven -	____	____
e. Refrigerator -	____	____
f. Cryostat -	____	____
3. Explained the purpose of an alcohol hydrometer -	____	____
4. Checked and recorded alcohol percentages on tissue processor and stain set-up -	____	____
5. Explained the function of a pH meter -	____	____
6. Checked and recorded the pH of 10% Neutral Buffered Formalin -	____	____
7. Checked and recorded the pH of Hematoxylin in the stain set-up -	____	____
8. Identified values which fell outside the correct range and documented corrective action procedures -	____	____

Criteria:	Competence in the task will be recognized when the achievement indicators are successfully performed according to quality control laboratory guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Quality Control Procedures	**Duty No.** D
	Task No. 5

Task: Perform staining procedures, using control slides, to ensure their reliability and validity.

Achievement Indicators: The learner:	Yes	No
1. Described the purpose of using a control slide -	____	____
2. Identified types of control slides used in various stain procedures -	____	____
3. Explained the function of a positive and negative control slide -	____	____
4. Kept accurate records on the special stain control record sheet -	____	____
5. Used the correct control slide for each special stain procedure -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the supervisor.

Tools and Equipment:	**Resources:**

Duty: Processing Tissue Specimens	**Duty No.** E
	Task No. 1

Task: Fix tissue specimens, using formalin or other fixative solutions, to preserve cellular composition.

Achievement Indicators: The learner:	Yes	No
1. Described the purpose of fixation -	____	____
2. Identified the need for routine or special fixatives as indicated by tissue type and/or staining technique -	____	____
3. Accurately prepared 10% Neutral Buffered Formalin solution -	____	____
4. Accurately prepared the following special fixatives:		
a. Zenker's Solution -	____	____
b. Helly's Solution -	____	____
c. B-5 Solution -	____	____
d. Bouin's Solution -	____	____
e. Carnoy's Solution -	____	____
*5. Placed tissue specimen in recommended fixative solution -	____	____
6. Checked tissue specimen for correct tissue to fixative solution ratio -	____	____
7. Cleaned work area -	____	____
8. Returned supplies to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Teacher Activities	Student Learning Activities
Review 1. Review purpose of fixation. 2. Review safety procedures for handling chemicals. 3. Review use of pH meter. Presentation 1. Discuss the theory of fixation. 2. List various fixatives - advantages/ disadvantages. 3. Demonstrate the preparation of various fixatives. Summary 1. Review the importance of proper fixation. 2. Evaluate student's competency of the task.	Exercise 1. Read reference and resource information. 2. Record lecture notes. 3. Observe film strip. 4. Prepare various fixative solutions. 5. Identify the purpose for each fixative. 6. Fix tissue specimens in special fixatives, following specific procedures. 7. Demonstrate a proficiency of this task.

Duty: Processing Tissue Specimens	**Duty No.** E
	Task No. 2

Task: Set up gross dissection area, using appropriate supplies and equipment, to obtain tissue sample.

Achievement Indicators: The learner:	Yes	No
1. Set up dissection work area -	____	____
2. Selected appropriate dissecting instruments -	____	____
3. Attached scalpel blade to scalpel handle using correct safety techniques -	____	____
4. Arranged tissue specimens to be dissected in numerical order according to accession number -	____	____
5. Placed tissue cassette(s) with correct accession number next to each specimen container -	____	____
6. Recorded appropriate information on tissue specimen record sheet -	____	____
7. Prepared tissue specimens to be placed on automatic tissue processor -	____	____
8. Removed and disposed scalpel blade from handle using correct safety technique -	____	____
9. Disinfected dissection work area -	____	____
10. Returned supplies and instruments to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Processing Tissue Specimens	**Duty No.** E
	Task No. 3

Task: Process tissue samples, using an automatic tissue processor, to prepare specimens for embedding.

Achievement Indicators: The learner:	Yes	No
1. Described the function and operation of the automatic tissue processor -	____	____
2. Checked fuses and power source -	____	____
3. Checked fluid levels and replenished solutions as indicated -	____	____
4. Checked pH on 10% Neutral Buffered Formalin and replaced solutions as indicated -	____	____
5. Checked percentage of alcohol reagents with alcohol hydrometer and replaced solutions as indicated -	____	____
6. Checked temperature on paraffin pots and corrected temperature range if necessary -	____	____
7. Set timing device on automatic tissue processor -	____	____
8. Placed tissue cassettes in basket and attached to processor -	____	____
9. Set automatic selector switch -	____	____
10. Set delay timer if applicable -	____	____
11. Took appropriate step to remedy a problem in processing -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____

Criteria:	Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Processing Tissue Specimens	**Duty No.** E
	Task No. 4

Task: Embed tissue sample, using supplies and equipment, to obtain a paraffin block.

Achievement Indicators: The learner:	Yes	No
1. Described the purpose of the embedding procedure -	____	____
2. Listed the steps in the embedding procedure -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Set up embedding center work area -	____	____
5. Removed tissue cassettes from automatic tissue processor and placed in embedding center work area -	____	____
6. Correctly oriented tissue specimen in appropriate embedded mold -	____	____
7. Labeled specimen block -	____	____
8. Filled mold with melted paraffin and allow to harden -	____	____
9. Removed mold from hardened paraffin block -	____	____
10. Recorded appropriate information on tissue specimen record sheet -	____	____
11. Arranged paraffin blocks on tray (in refrigerator) until sectioned -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____

Criteria:	Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Processing Tissue Specimens | **Duty No.** E | **Task No.** 5

Task: Decalcify tissue specimens, using bone/teeth, to prepare them for processing.

Achievement Indicators: The learner:	Yes	No
1. Described the purpose of the decalcifying procedure -	____	____
2. Identified methods of decalcification and listed advantages and disadvantages of each method -	____	____
3. Described several methods for determining the end point of decalcification -	____	____
4. Obtained necessary supplies and equipment -	____	____
5. Chose appropriate decalcification method for specific type of bone specimen -	____	____
6. Prepared decalcification solution as indicated -	____	____
7. Placed fixed bone specimen in decalcification solution -	____	____
8. Checked bone specimen for end point determination -	____	____
9. Washed decalcified bone specimen in tap water -	____	____
10. Placed decalcified bone specimen in appropriate fixative solution until processed -	____	____
11. Cleaned up work area -	____	____
12. Returned supplies and equipment to appropriate cabinets -	____	____

Criteria:	Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Using Microtomy Techniques	**Duty No.** F
	Task No. 1

Task: Sharpen a microtome knife, using a manual method, to obtain a sharp knife.

Achievement Indicators: The learner:	Yes	No
1. Identified the knife facet, bevel, back, handle and trademark -	____	____
2. Listed the steps in manually honing and stropping knife -	____	____
3. Obtained necessary supplies to hone and strop a knife -	____	____
4. Checked the knife edge under the microscope -	____	____
5. Attached the knife handle and back -	____	____
6. Honed the knife -	____	____
7. Stropped the knife -	____	____
8. Rechecked knife edge under the microscope -	____	____
9. Cleaned work area -	____	____
10. Returned supplies and equipment to designated cabinet -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:**

Teacher Activities	Student Learning Activities
Review 1. Review safety procedures. 2. Review the use of the microscope. Presentation 1. Describe the procedure for sharpening a microtome knife. 2. Identify the various types of knife sharpeners. 3. Demonstrate the procedure for setting up the work area, operating the knife sharpener, checking the knife under the microscope and cleaning up the work area. Summary 1. Review knife sharpening procedure. 2. Evaluate student's competency of the task.	Exercise 1. Read reference and resource information. 2. Record lecture notes. 3. Observe demonstration. 4. Practice knife sharpener procedure. 5. Demonstrate a proficiency for this task.

Duty: Using Microtomy Techniques	**Duty No.** F
	Task No. 2

Task: Operate the automatic knife sharpener, using appropriate equipment, to obtain a sharp microtome knife.

Achievement Indicators: The learner:	Yes	No
1. Identified the principle of the automatic knife sharpener -	____	____
2. Listed the steps in the automatic knife sharpening procedure -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Cleaned microtome knife with xylene -	____	____
5. Checked microtome knife edge under the microscope using 10x objective -	____	____
6. Attached microtome knife to knife sharpener -	____	____
7. Operated knife sharpener according to manufacturer's recommendations -	____	____
8. Rechecked knife edge under the microscope following sharpening -	____	____
9. Cleaned up work area -	____	____
10. Returned supplies and equipment to appropriate cabinet -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the manufacturer's operating manual.

Tools and Equipment:	**Resources:**

Duty: Using Microtomy Techniques	**Duty No.** F
	Task No. 3

Task: Cut paraffin tissue blocks, using a rotary microtome and knife, to obtain thin sections of tissue.

Achievement Indicators: The learner:	Yes	No
1. Described the function of a microtome -	____	____
2. Obtained necessary supplies and equipment -	____	____
3. Clamped sharpened microtome knife in position -	____	____
4. Adjusted micron setting to obtain sections of desired thickness -	____	____
5. Placed specimen block in block holder -	____	____
6. Trimmed block to full face -	____	____
7. Reprocessed/re-embedded tissue, if necessary -	____	____
8. Sectioned tissue specimen to obtain ribbon -	____	____
9. Placed tissue ribbon on warm flotation water bath -	____	____
10. Selected representative section of tissue -	____	____
11. Labeled slide with accession number -	____	____
12. Picked up section on glass slide -	____	____
13. Placed slides in staining rack and in warm oven for recommended time -	____	____
14. Returned microtome knife to storage box -	____	____
15. Cleaned up work area -	____	____
16. Greased and oiled microtome as needed -	____	____
17. Returned supplies and equipment to appropriate cabinets -	____	____

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Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Using Microtomy Techniques	**Duty No.** F
	Task No. 4

Task: Set up flotation water bath, using equipment, to obtain wrinkle-free tissue section.

Achievement Indicators: The learner:	Yes	No
1. Obtained necessary supplies and equipment -	____	____
2. Filled flotation water bath to capacity with warm tap water -	____	____
3. Plugged in cord and turned switch to "on" position -	____	____
4. Adjusted to specified temperature -	____	____
5. Added slide adhesive to water bath -	____	____
6. Maintained a clean flotation water bath free from air bubbles -	____	____
7. Cleaned up work area -	____	____
8. Returned supplies and equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Using Microtomy Technique	**Duty No.** F
	Task No. 5

Task: Set up slide drier/oven, using heat, to adhere tissue sections to slide.

Achievement Indicators: The learner:	Yes	No
1. Obtained necessary supplies and equipment -	____	____
2. Plugged cord into electric outlet -	____	____
3. Adjusted temperature to $60^{o}C$ -	____	____
4. Identified correct length of time for drying slides -	____	____
5. Cleaned up work area -	____	____
6. Returned supplies and equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Using Microtomy Techniques	**Duty No.** F
	Task No. 6

Task: Freeze/cut frozen tissue samples, using cryostat and knife, to obtain sections.

Achievement Indicators: The learner:	Yes	No
1. Identified purpose of cryostat sections -	____	____
2. Listed steps in operating cryostat -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Checked cryostat control panel -	____	____
5. Oriented specimen on chuck using aqueous support medium -	____	____
6. Rapidly froze tissue to optimum temperature -	____	____
7. Placed chuck in block holder -	____	____
8. Sectioned tissue specimen after trimming into block -	____	____
9. Picked up sections on slides -	____	____
10. Cleaned/disinfected cryostat -	____	____
11. Sharpened microtome knife if necessary -	____	____
12. Returned supplies and equipment to appropriate cabinet -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to instructions.

Tools and Equipment:	**Resources:**

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 1

Task: Stain tissue sections, using solutions, to demonstrate nuclear and cytoplasmic components.

Achievement Indicators: The learner:	Yes	No
1. Identified the purpose of the staining procedure -	____	____
2. Obtained necessary supplies and equipment -	____	____
3. Prepare solutions required for procedure -	____	____
4. Set up stain work area -	____	____
5. Followed quality control procedures -	____	____
6. Completed staining procedure -	____	____
7. Coverslipped stained slides with a mounting media -	____	____
8. Labeled slides with appropriate information -	____	____
9. Matched labeled slide to corresponding block -	____	____
10. Recorded the number of stained slides on record sheet -	____	____
11. Placed slides numerically in slide folder to be given to pathologist -	____	____
12. Cleaned work area -	____	____
13. Returned supplies to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to standard operating procedure manual.

Tools and Equipment:	**Resources:**

Teacher Activities	Student Learning Activities
Review 1. Review concepts of nuclear and cytoplasmic dyes. 2. Discuss example of good laboratory techniques for staining. Presentation 1. Lecture on nuclear and cytoplasmic dyes and various combinations. 2. List steps in a routine nuclear - cytoplasmic staining procedure. 3. Demonstrate routine staining procedure. Summary 1. Review criteria for a well-stained slide. 2. Evaluate student's competency of staining nuclear and cytoplasmic components.	Exercise 1. Read reference and resource information. 2. Record lecture notes. 3. Demonstrate how to set up stain work area. 4. Demonstrate correct use of quality control procedures. 5. Demonstrate preparation of solutions accurately. 6. Demonstrate precise staining procedure. 7. Demonstrate proper coverslipping technique. 8. Demonstrate accurate and neat labeling of slides.

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 2

Task: Coverslip tissue sections under a hood, using a synthetic mounting media, to make a permanent preparation.

Achievement Indicators: The learner:	Yes	No
1. Assembled mounting media and covering slipping materials -	____	____
2. Checked mounting media for correct viscosity -	____	____
3. Removed excess xylene from slides and placed one or two drops of mounting media on slide -	____	____
4. Used correct size coverslip and apply to slide -	____	____
5. Removed any air bubbles from under coverslip -	____	____
6. Removed excess mounting media from edges of coverslip -	____	____
7. Checked slide for the absence of air bubbles, fingerprints and streaks -	____	____
8. Affixed label to slide -	____	____
9. Evaluated completed slide for overall quality -	____	____
10. Cleaned work area -	____	____
11. Returned supplies and equipment to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 3

Task: Stain frozen tissue section, using a rapid stain procedure, to provide a section for immediate diagnosis.

Achievement Indicators: The learner:	Yes	No
1. Assembled supplies and staining solutions -	____	____
2. Labeled slide with correct identification -	____	____
3. Froze/cut tissue section and placed on slide -	____	____
4. Performed rapid stain procedure -	____	____
5. Coverslipped slide with mounting media -	____	____
6. Delivered slide to pathologist for microscopic examination -	____	____
7. Cleaned work area -	____	____
8. Returned supplies to appropriate cabinets -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 4

Task: Coverslip frozen tissue sections, using an aqueous mounting media, to make temporary/permanent preparation.

Achievement Indicators: The learner:	Yes	No
1. Assembled aqueous mounting media and coverslipping materials -	____	____
2. Checked mounting media for absence of air bubbles and correct viscosity. (Warmed mounting media if necessary) -	____	____
3. Removed tissue slide from water and placed one or two drops of mounting media on slide -	____	____
4. Used correct size coverslip and applied to slide -	____	____
5. Removed any air bubbles from under coverslip by gentle pressure -	____	____
6. Removed excess mounting media from edges of coverslip -	____	____
7. Checked slide for the absence of air bubbles, fingerprints and streaks -	____	____
8. Affixed label to slide -	____	____
9. Evaluated completed slide for overall quality -	____	____
10. Ringed coverslip with clear nail polish after mounting media hardened -	____	____
11. Cleaned work area -	____	____
12. Returned supplies and equipment to appropriate cabinets -	____	____

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 5

Task: Stain tissue sections, using solutions, to demonstrate fats and lipids.

Achievement Indicators: The learner:	Yes	No
1. identified the purpose of the staining procedure -	____	____
2. Reviewed staining instructions and special precautions -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Prepared solutions required for procedures -	____	____
5. Set up stain work area -	____	____
6. Performed quality control procedures -	____	____
7. Stained frozen tissue section using a method to demonstrate fats and lipids -	____	____
8. Coverslipped stained section with an aqueous mounting media -	____	____
9. Labeled slide wi h appropriate information -	____	____
10. Evaluated over-all quality of stained slide -	____	____
11. Recorded information on special stain record sheet -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____
14. Filed slides when mounting media has completely dried -	____	____

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 6

Task: Stain tissue sections, using solutions, to demonstrate hematological elements.

Achievement Indicators: The learner:	Yes	No
1. Identified the purpose of the staining procedure -	____	____
2. Reviewed staining instructions and special precautions -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Prepared solutions required for procedures -	____	____
5. Set up stain work area -	____	____
6. Performed quality control procedures -	____	____
7. Stained tissue sections using a method to demonstrate blood cells -	____	____
8. Coverslipped stained section with a mounting media -	____	____
9. Labeled slide with appropriate information -	____	____
10. Evaluated over-all quality of stained slides -	____	____
11. Recorded information on special stain record sheet -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____
14. Filed slides when mounting media has completely dried -	____	____

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 7

Task: Stain tissue sections, using solutions, to demonstrate pigments and minerals.

Achievement Indicators: The learner:	Yes	No
1. Identified the purpose of the staining procedure -	____	____
2. Reviewed staining instructions and special precautions -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Prepared solutions required for procedures -	____	____
5. Set up stain work area -	____	____
6. Performed quality control procedures -	____	____
7. Stained tissue sections using a method to demonstrate:		
a. Hemosiderin -	____	____
b. Calcium -	____	____
c. Melanin -	____	____
8. Coverslipped slides with a mounting media -	____	____
9. Labeled slides with appropriate information -	____	____
10. Evaluated over-all quality of stained slides -	____	____
11. Recorded information on special stain record sheet -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____
14. Filed slides when mounting media has completely dried -	____	____

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 8

Task: Stain tissue sections, using solutions, to demonstrate connective and muscle tissue.

Achievement Indicators: The learner:	Yes	No
1. Identified the purpose of the staining procedure -	____	____
2. Reviewed staining instructions and special precautions -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Prepared stain solutions required for procedure -	____	____
5. Set up stain work area -	____	____
6. Performed quality control procedures -	____	____
7. Stained tissue sections using a method to demonstrate:		
a. Collagen/reticulum -	____	____
b. Smooth muscle -	____	____
c. Striated muscle -	____	____
d. Elastic fibers -	____	____
8. Coverslipped stained sections using a mounting media -	____	____
9. Labeled slides with appropriate information -	____	____
10. Evaluated over-all quality of stained slides -	____	____
11. Recorded information on special stain record sheet -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____
14. Filed slides when mounting media has completely dried -	____	____

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 9

Task: Stain tissue sections, using solutions, to demonstrate carbohydrates.

Achievement Indicators: The learner:	Yes	No
1. Identified the purpose of the staining procedure -	____	____
2. Reviewed staining instructions and special precautions -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Prepared stain solutions required for procedure -	____	____
5. Set up stain work area -	____	____
6. Performed quality control procedures -	____	____
7. Stained tissue sections using a method to demonstrate:		
a. Glycogen -	____	____
b. Amyloid -	____	____
c. Muco proteins -	____	____
8. Coverslipped stained sections with a mounting media -	____	____
9. Labeled slides with appropriate information -	____	____
10. Evaluated over-all quality of stained slides -	____	____
11. Recorded information on special stain record sheet -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____
14. Filed slides when mounting media has completely dried -	____	____

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 10

Task: Stain tissue sections, using solutions, to demonstrate micro-organisms.

Achievement Indicators: The learner:	Yes	No
1. Identified the purpose of the staining procedure -	____	____
2. Reviewed staining instructions and special precautions -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Prepared stain solutions required for procedure -	____	____
5. Set up stain work area -	____	____
6. Performed quality control procedures -	____	____
7. Stained tissue section using a method to demonstrate:		
a. Gram positive/gram negative organisms -	____	____
b. Acid-fast organisms -	____	____
c. Fungi -	____	____
d. Parasites -	____	____
8. Coverslipped stained sections with a mounting medium -	____	____
9. Labeled slide with appropriate information -	____	____
10. Evaluated over-all quality of stained slide -	____	____
11. Recorded information on special stain record sheet -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____
14. Filed slides when mounting media has completely dried -	____	____

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 11

Task: Stain tissue sections, using solutions, to demonstrate central nervous system tissue.

Achievement Indicators: The learner:	Yes	No
1. Identified the purpose of the staining procedure -	____	____
2. Reviewed staining instructions and special precautions -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Prepared stain solutions required for procedures -	____	____
5. Set up stain work area -	____	____
6. Performed quality control procedures -	____	____
7. Stained tissue sections using a method to demonstrate:		
a. Myelin -	____	____
b. Glial cells -	____	____
c. Glial fibers -	____	____
8. Coverslipped stained sections with a mounting medium -	____	____
9. Labeled slide with appropriate information -	____	____
10. Evaluated over-all quality of stained slide -	____	____
11. Recorded information on special stain record sheet -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____
14. Filed slides when mounting media has completely dried -	____	____

Duty: Performing Staining Procedures	**Duty No.** G
	Task No. 12

Task: Stain tissue sections, using solutions, to demonstrate silver impregnation techniques.

Achievement Indicators: The learner:	Yes	No
1. Identified the purpose of the staining procedure -	____	____
2. Reviewed staining instructions and special precautions -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Chemically cleaned glassware -	____	____
5. Prepared stain solutions required for procedure -	____	____
6. Set up stain work area -	____	____
7. Performed quality control procedures -	____	____
8. Stained tissue sections using a method to demonstrate:		
a. Reticulum fibers -	____	____
b. Fungus and/or spirochetes	____	____
c. Nerve fibers	____	____
d. Argentaffin/argyraphil cells	____	____
9. Coverslipped stained sections with a mounting media -	____	____
10. Labeled slide with appropriate information -	____	____
11. Evaluated over-all quality of stained slide -	____	____
12. Recorded information on special stain record sheet -	____	____
13. Cleaned work area -	____	____
14. Returned supplies and equipment to appropriate cabinets -	____	____
15. Filed slides when mounting media has completely dried -	____	____

Duty:	Duty No. G
	Task No. 13

Task: Stain tissue sections using solutions to demonstrate special cells and cytoplasm inclusions.

Achievement Indicators: The learner:	Yes	No
1. Identified the purpose of the staining procedure -	____	____
2. Reviewed staining instructions and special precautions -	____	____
3. Obtained necessary supplies and equipment -	____	____
4. Prepared stain solutions required for procedures -	____	____
5. Set up stain work area -	____	____
6. Performed quality central procedures -	____	____
7. Stained tissue section using a method to demonstrate:		
a. Pancreatic islet cell granules -	____	____
b. Pituitary cell granules -	____	____
c. J. G. cell of kidney	____	____
d. Paneth cell granule -	____	____
e. Chromaffin cells -	____	____
8. Coverslipped stained sections with a mounting media -	____	____
9. Labeled slide with appropriate information -	____	____
10. Evaluated over-all quality of stained slide -	____	____
11. Recorded information on special stain record sheet -	____	____
12. Cleaned work area -	____	____
13. Returned supplies and equipment to appropriate cabinets -	____	____
14. Filed slides when mounting media has completely dried -	____	____

Duty: Performing Cyto-Prep Duties	**Duty No.** H
	Task No. 1

Task: Package requested cytology kits, using materials, to provide clinicians and nursing stations with needed supplies.

Achievement Indicators: The learner:

	Yes	No
1. Prepared and labeled sputum collection jars -	____	____
2. Prepared and labeled gynecological specimen kits -	____	____
3. Prepared fixature solutions -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are performed successfully according to the supervisor.

Tools and Equipment:	**Resources:**

Teacher Activities	Student Learning Activities
Review 1. Discuss necessary supplies for both gynecological and non-gynecological cytology kits for physicians and for nursing stations in the hospital. Presentation 1. List the necessary supplies for: a. gynecological cytology kits b. sputum cytology kits 2. Demonstrate procedure to package cytology kit. Summary 1. Review what is necessary to prepare cytology kits for physicians office and nursing stations in hospitals.	Exercise 1. Read laboratory procedure manual for directions for putting together cytology kits. 2. Demonstrated proficiency in assembling supplies for kits. 3. Demonstrated proficiency in labeling kits.

Duty: Performing Cyto-Prep Duties	**Duty No.** H
	Task No. 2

Task: Accession cytology specimens, using logbook/computer, to ensure correct identification.

Achievement Indicators: The learner:	Yes	No
1. Accepted or rejected specimen on base of how it was received -	____	____
2. Assigned cytology numbers to c/v slides and corresponding request slips -	____	____
3. Entered numbers in logbook/computer -	____	____
4. Filled out charge copy properly -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Cyto-Prep Duties | **Duty No.** H | **Task No.** 3

Task: File cytology slides, using numerical accuracy, to ensure retrieval.

Achievement Indicators: The learner:

	Yes	No
1. Filed completely dried slides to their permanent location:		
a. Separate type (gyn, or non-gyn)	____	____
b. Correct year -	____	____
c. Whether negative or abnormal -	____	____
2. Retrieved slides from files on request -	____	____
3. Correctly utilized the cross index file -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:

Resources:

Duty: Performing Cyto-Prep Duties	**Duty No.** H
	Task No. 4

Task: Determine appropriate method of preparation for making smears, using a standard operating procedure manual, to ensure correct handling of specimen.

Achievement Indicators: The learner:	Yes	No
1. Selected the most advantageous preparation technique for each specimen received -	____	____
2. Prepared slides of non-gynecological body fluids/ sections -	____	____
3. Prepared wet film on body fluid specimens using Toluidine Blue procedure -	____	____
4. Delivered wet film preps to screening room for quick diagnosis -	____	____
5. Followed the recommended procedure for preparing body fluids which are bloody -	____	____
6. Prepared India Ink slides to be used for demonstration of cryptococcus -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Cyto-Prep Duties	**Duty No.** H
	Task No. 5

Task: Prepare non-gynecological body fluids/secretions, using a standard operating procedure manual, to make a smear.

Achievement Indicators: The learner:	Yes	No
1. Obtained necessary supplies for preparation of viscous body fluids (sputum) -	____	____
2. Labeled slides with accession numbers -	____	____
3. Made duplicate smears of specimen -	____	____
4. Fixed immediately in appropriate fixative -	____	____
5. Cleaned work area -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Cyto-Prep Duties	**Duty No.** H
	Task No. 6

Task: Prepare non-gynecological body fluids/secretions, using a centrifuge, to make smears/cell blocks.

Achievement Indicators: The learner:	Yes	No
1. Selected appropriate size centrifuge tubes -	____	____
2. Operated centrifuge properly:		
a. Balanced tubes -	____	____
b. Turned in at proper speed -	____	____
c. Turned on for proper length of time -	____	____
3. Decanted supernatant -	____	____
4. Labeled slides with accession numbers -	____	____
5. Prepared prescribed number of smears of sediment -	____	____
6. Fixed smears immediately in prescribed fixative -	____	____
7. Prepared cell block from sediment -	____	____
8. Delivered cell block specimen to histology lab -	____	____
9. Cleaned up work area -	____	____

Criteria: Competence in the task will be recognized when the achivement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Cyto-Prep Duties	**Duty No.** H
	Task No. 7

Task: Prepare non-gynecological body fluids/secretions, using a membrane filter technique, to make a smear.

Achievement Indicators: The learner:	Yes	No
1. Selected which specimen will require membrane filters -	____	____
2. Selected appropriate type of filter (Gelman, Nucleopore, Millipore) -	____	____
3. Operated suction apparatus correctly -	____	____
4. Labeled slides with accession number -	____	____
5. Prepared two filter preparations on each specimen -	____	____
6. Placed filters in fixative -	____	____
7. Cleaned up work area -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the standard operating procedure manual.

Tools and Equipment:	**Resources:**

Duty: Performing Cyto-Prep Duties	**Duty No.** H
	Task No. 8

Task: Stain gynecological/non-gynecological smears, using the Papanicolaou staining technique, to demonstrate nuclear and cytoplasmic components.

Achievement Indicators: The learner:	Yes	No
1. Chose appropriate slide rack -	____	____
2. Loaded slides in prescribed manner -	____	____
3. Operated automatic stainer, if available:		
a. Properly disposed old solutions -	____	____
b. Filtered new stains -	____	____
c. Made up 50% and 70% alcohol from 95% alcohol -	____	____
d. Filled and properly timed all stations -	____	____
e. Operated correctly all machine switches -	____	____
f. Loaded full rack of slides on machine -	____	____
g. Turned on water bath -	____	____
h. Advanced slides thru machine automatically -	____	____
i. Unloaded stained slides into xylene holding dish -	____	____
4. Stained slides manually following recommended quality control guidelines -	____	____
5. Took appropriate steps to remedy a problem in staining:		
a. Slides overstained -	____	____
b. Slides understained (or excess decoloration) -	____	____
c. Water in the xylol -	____	____
d. Fixative remaining on slides -	____	____
e. Cross-contamination -	____	____
f. Solutions level too low on staining machine -	____	____
g. Improper timing on staining machine -	____	____
h. Sequence of solutions improper on machine -	____	____

	Yes	No
i. Mechanical problems with machine -	____	____
6. Cleaned work area -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the supervisor and the standard operating procedure manual.

Tools and Equipment:	**Resources:**
Viewed film on the Papanicolaou stain	

Duty: Performing Cyto-Prep Duties	**Duty No.** H
	Task No. 9

Task: Coverslip gynecological and non-gynecological smears, using appropriate synthetic mounting media, to make permanent slide preparations.

Achievement Indicators: The learner:	Yes	No
1. Chose appropriate mounting media for coverslipping -	____	____
2. Applied the correct amount of mounting media -	____	____
3. Did not allow the dropper of mounting media to touch actual specimen on slide -	____	____
4. Chose appropriate size and thickness of coverglass -	____	____
5. Applied coverslip, avoiding air drying between xylol and mounting media -	____	____
6. Eliminated any air bubbles -	____	____
7. Avoided mounting media on top of coverslip -	____	____
8. Avoided fingerprints on coverslip -	____	____
9. Avoided all forms of possible cross-contamination -	____	____
10. Properly labeled slides with prepared adhesive labels -	____	____
11. Matched requisition slips with coverslipped slides -	____	____
12. Delivered slides and requisition slips to screening room -	____	____

Duty: Performing Autopsy Assistant Duties	**Duty No.** I
	Task No. 1

Task: Accession autopsy case, using a logbook/computer, to ensure correct identification.

Achievement Indicators: The learner:	Yes	No
1. Recorded information such as date, name of deceased, physician, time of death, tentative diagnosis in autopsy logbook -	____	____
2. Labeled autopsy tissue specimen containers with correct accession autopsy number -	____	____
3. Labeled gross specimen containers with correct autopsy number -	____	____
4. Labeled brain jar (if a complete autopsy) with correct autopsy number -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to hospital protocol and safety guidelines.

Tools and Equipment:	**Resources:**

Teacher Activities	Student Learning Activities
Review 1. Review concepts of quality control and good laboratory practices. Presentation 1. Discuss the information necessary to record in the autopsy logbook/computer. 2. Provide a sample logbook sheet. Summary 1. Review medical-legal importance of maintaining accurate identity of autopsy information.	Exercise 1. Read reference and resource information. 2. Record lecture notes. 3. Accurately record information in autopsy logbook/computer. 4. Accurately labeled all autopsy specimen containers.

Duty: Performing Autopsy Assistant Duties	**Duty No.** I
	Task No. 2

Task: Set up autopsy area, using appropriate instruments/equipment, to assist in post-mortem examination.

Achievement Indicators: The learner:	Yes	No
1. Laid out prescribed number and kind of autopsy instruments -	____	____
2. Put onto head block on autopsy table -	____	____
3. Checked and set up calibrated suction apparatus	____	____
4. Recorded autopsy number on chalk board ready to record weight and measures -	____	____
5. Checked supply of towels and string -	____	____
6. Checked supply of gross staining solutions for amyloid and iron -	____	____
7. Sharpened dissecting knives when necessary -	____	____
8. Checked special containers or material (eg. culture tubes) -	____	____

Criteria: Competence in the task will be recognized when the achivement indicators are successfully performed according to hospital protocol and safety guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Autopsy Assistant Duties	**Duty No.** I
	Task No. 3

Task: Provide appropriate instruments, using a knowledge of autopsy procedure, to assist in post-mortem examination.

Achievement Indicators: The learner:	Yes	No
1. Handed appropriate instruments to diener or pathologist when needed -	____	____
2. Assisted with taking cultures, when asked -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to hospital protocol and safety guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Autopsy Assistant Duties	**Duty No.** I
	Task No. 4

Task: Weigh/record specimens, using a balance, to ensure accurate measurement.

Achievement Indicators: The learner:	Yes	No
1. Had appropriate balance ready for use -	____	____
2. Recorded weight of specimen on chalk board or paper -	____	____
3. Cleaned up balance, after use -	____	____
4. Recorded pathology data during autopsy, when dictation equipment was not available -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to hospital protocol and safety guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Autopsy Assistant Duties	**Duty No.** I
	Task No. 5

Task: Collect autopsy specimens, using standard operating procedures manual to deliver to the appropriate laboratory.

Achievement Indicators: The learner:	Yes	No
1. Kept supply of formalin-filled containers for stock and trimmed autopsy specimens -	____	____
2. Kept supply of sterile culture tubes -	____	____
3. Transported autopsy specimen to laboratory -	____	____
4. Transported culture to microbiology lab -	____	____
5. Kept supply of gross organ containers -	____	____
6. Made up large quantities of neutral buffered 10% formalin for both autopsies and surgical specimens -	____	____
7. Collected and transported specimens for toxicological examination, when asked -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to hospital protocol and safety guidelines.

Tools and Equipment:	**Resources:**

Duty: Performing Autopsy Assistant Duties	**Duty No.** I
	Task No. 6

Task: Clean morgue area, using supplies, to ensure a hygenic environment.

Achievement Indicators: The learner:	Yes	No
1. Washed down tables, counters, and instruments with water and germ cidal soap -	____	____
2. Cleaned table and instruments with 1:10 chlorox solution plus autoclaved instrument for prescribed time after an infectious case -	____	____
3. Disposed soiled linens -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to hospital protocol and safety guidelines.

Tools and Equipment:	**Resources:**

Duty: Using Employability Skills	**Duty No.** J
	Task No. 1

Task: Perform a self-assessment, using knowledge and information, to compile a list of personal attributes.

Achievement Indicators: The learner:

	Yes	No
1. Listed work-related accomplishments-	____	____
2. Listed non-work related accomplishments -	____	____
3. Identified skills and competency attainment -	____	____
4. Identified transferable (portable) skills -	____	____
5. Determined strengths and weaknesses -	____	____
6. Described job liabilities and the affect liabilities have on employment opportunities -	____	____
7. Developed a plan to overcome job liabilities -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:
Goodman, Jane, Judith Hoppin and Ronald Kent, "First Steps" in Opening Doors: A Practical Guide for Job Hunting. Continuum Center, Oakland University, 1984, pp. 7-14.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 2

Task: Perform a self-assessment, using knowledge and information, to identify areas of work that will provide personal job satisfaction.

Achievement Indicators:

The learner	Yes	No
1. Listed personal job values -	____	____
2. Rated each job value -	____	____
3. Listed enjoyable activities/interests -	____	____

Criteria: Competence in the taks will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:**
	Ibid, pp. 16-20

Duty: Using Employability Skills	**Duty No.** J
	Task No. 3

Task: Perform a self-assessment, using knowledge and information, to determine methods to reduce levels of stress.

Achievement Indicators: The learner:

	Yes	No
1. Identified stages of grief that result in stress -	____	____
2. Identified factors that reduced levels of stress -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:**
	Ibid, pp. 21-23.

Duty: Using Employability Skills

Duty No. J

Task No. 4

Task: Compile an occupational profile, using reference materials, to determine the characteristics, requirements, and employment outlook of an occupation.

Achievement Indicators: The learner:

	Yes	No
1. Described:		
a. Main job duties	____	____
b. Places of employment -	____	____
c. Physical demands -	____	____
d. Working (environmental) conditions -	____	____
e. Educational requirements -	____	____
f. Wage and fringe benefit information -	____	____
g. Local, regional and national employment outlook -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:
Dictionary of Occupational Titles (D.O.T.).
Goodman, Jane, Judith Hoppin and Ronald Kent, "Making Decisions," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 27-34.
Michigan Occupational Information System (M.O.I.S.)

Duty: Using Employability Skills	**Duty No.** J
	Task No. 5

Task: Investigate non-wage job characteristics, using available resources, to identify significant job factors.

Achievement Indicators:

The learner	Yes	No
1. Listed and described:		
a. Union affiliation -	____	____
b. Apprenticeship opportunities -	____	____
c. Occupational hazards -	____	____
d. Shift requirements -	____	____

Criteria:
Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:
Dictionary of Occupational Titles (D.O.T.).
Goodman, Jane, Judith Hoppin and Rônald Kent, "Making Decisions," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 27-34.
Michigan Occupational Information System (M.O.I.S.)

Duty: Using Employability Skills	**Duty No.** J
	Task No. 6

Task: Develop goals, using knowledge, to determine career objective(s).

Achievement Indicators:

The learner:	Yes	No
1. Listed short-term goals	____	____
2. Listed long-term goals -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:** Ibid, pp. 30-31.

Duty: Using Employability Skills

Duty No. J

Task No. 7

Task: Perform a job search, using information, to identify employment opportunities.

Achievement Indicators: The learner:

		Yes	No
1.	Determined geographic boundaries for job search -	____	____
2.	Listed types of potential places of employment -	____	____
3.	Developed a list of prime sources of information concerning opportunities for employment -- advertised and unadvertised -	____	____
4.	Gathered information about advertised and unadvertised job openings -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:

Goodman, Jane, Judith Hoppins and Ronald Kent, "Planning the Campaign," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 37-47

Duty: Using Employability Skills

Duty No. J

Task No. 8

Task: Participate in an information interview, using knowledge and resources, to obtain information about a job from an employer.

Achievement Indicators:

The learner:	Yes	No
1. Identified a job within the area of occupational interest -	____	____
2. Prepared a list of organizations that employ people to perform the identified job -	____	____
3. Scheduled an interview appointment with an employer at one of the organizations -	____	____
4. Prepared a list of questions for the interview -	____	____
5. Conducted the interview -	____	____
6. Prepared a follow-up letter to mail, after the interview, to the employer		

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:

Goodman, Jane, Judith Hoppin and Ronald Kent, "Planning the Job Campaign," Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 44-45.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 9

Task: Complete a social security form, using information, to apply for a social security number.

Achievement Indicators:

The learner:	Yes	No
1. Contacted appropriate office to secure form -	____	____
2. followed instructions on form -	____	____
3. Filled in each space on the form with the correct information -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions

Tools and Equipment:	**Resources:** "Handling the Paperwork," Employability Skills Guide #6, MSU.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 10

Task: Contact an employer, using a telephone, to pursue potential employment opportunities.

Achievement Indicators:

The learner:	Yes	NO
1. Greeted receptionist -	____	____
2. Identified self and reason for phone call -	____	____
3. Asked to speak to appropriate person -	____	____
4. Arranged, if necessary, a time to call back -	____	____

Criteria: Competence in the takd will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:

Goodman, Jane, Judith Hoppins, and Ronald Kent, "Communicating with Employers," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 54-57.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 11

Task:
Complete a job application, using personal notes, to apply for employment.

Achievement Indicators:

The learner:	Yes	No
1. Followed the directions specified on the application form -	____	____
2. Filled in each space where applicable, with the correct information -	____	____
3. Used a pen or typewriter to fill in application information -	____	____
4. Filled out the application neatly -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:

Goodman, Jane, Judith Hoppins and Ronald Kent, "Communicating with Employers," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 61-64

Duty: Using Employability Skills | **Duty No.** J | **Task No.** 12

Task: Prepare a resume, using personal information, to apply for a job.

Achievement Indicators:

The learner:	Yes	No
1. Listed name, address, and telephone number -	____	____
2. Identified career objective -	____	____
3. Listed work experiences	____	____
4. Described job-related experiences -	____	____
5. Provided information about education -	____	____
6. Listed military experence, if acquired -	____	____
7. Described home/community activities -	____	____
8. Listed membership in work-related organizations/ associations -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:

Goodman, Jane, Judith Hoppins and Ronald Kent, "Communicating with Employers," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 58-59, 65-71.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 13

Task: Write a letter, using personal notes, to apply for a position.

Achievement Indicators: The learner:	Yes	No
1. Included:		
a. Name, address, phone number -	____	____
b. Date -	____	____
c. Name, title, firm, address of person to whom the letter is being sent -	____	____
d. Salutation -	____	____
2. Indicated, in paragraph one:		
a. An awareness of the business -	____	____
b. A reference to an ability/skill that will benefit the company -	____	____
3. Emphasized experience, abilities, accomplishments, in paragraph two -	____	____
4. Identified strengths/special training in paragraph three -	____	____
5. Included a follow-up plan in paragraph four -	____	____
6. Included complimentary closing -	____	____
7. Signed letter -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:**
	Goodman, Jane, Judith Hoppin and Ronald Kent, "Communicating with Employers," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 72-73.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 14

Task: Demonstrate appropriate dress, using a knowledge of job requirements, to comply with standards of on-the-job attire and grooming.

Achievement Indicators: The learner:	Yes	No
1. Described and/or dressed in the attire of the appropriate occupational area, including:		
a. Grooming -	____	____
b. Health and safety equipment -	____	____
c. Uniforms -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:

Goodman, Jane, Judith Hoppin and Ronald Kent, "The Job Interview," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 77-96.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 15

Task: Interview for a job, using communication skills, to secure employment.

Achievement Indicators: The learner:	Yes	No
1. Demonstrated appropriate characteristics for job applicants including:		
a. Attire -	____	____
b. Grooming -	____	____
c. Conduct -	____	____
2. Demonstrated correct usage of interviewing techniques -	____	____
3. Prepared a list of questions to ask the interviewer(s) -	____	____
4. Prepared a follow-up letter to mail, after the interview, to the interviewer -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:**
	Goodman, Jane, Judith Hoppin and Ronald Kent, "The Job Interview," in Opening Doors: A Practicle Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 77-96.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 16

Task: Contact a job interviewer, using a telephone, to accept/reject a job.

Achievement Indicators: The learner:	Yes	No
1. Spoke with interviewer who offered the job -	____	____
2. Identified self -	____	____
3. Accepted offer, if applicable -	____	____
4. Found out starting date and time, if appropriate -	____	____
5. Rejected offer courteously and politely, if applicable -	____	____
6. Gave reason for rejection, if applicable -	____	____
7. Concluded conversation correctly -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructor.

Tools and Equipment:	**Resources:**
	"Getting the Job," Employability Skills Guide #9, MSU. Ibid, pp. 77-96

Duty: Using Employability Skills	**Duty No.** J
	Task No. 17

Task: Complete forms, using information, to withhold city, state, and federal taxes.

Achievement Indicators: The learner:	Yes	No
1. Completed city tax form correctly -	____	____
2. Completed state tax form correctly -	____	____
3. Completed federal tax form correctly -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:**

Duty: Using Employability Skills	**Duty No.** J
	Task No. 18

Task: Describe performance evaluation measurements, using knowledge, to identify behavior/attitudes that employers expect employees to exhibit on-the-job.

Achievement Indicators: The learner:	Yes	No
1. Listed and described the methods to achieve successful working relationships -	____	____
2. Listed and defined importance of:		
a. Reliability -	____	____
b. Punctuality -	____	____
c. Quality -	____	____
d. Quantity -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:**
	Goodman, Jane, Judith Hoppin and Ronald Kent, "Opening the Door to Your Future," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 99-100.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 19

Task: Perform a continuing education program search, using available resources, to identify opportunities for retraining, skills upgrading, and career advancement.

Achievement Indicators: The learner:

	Yes	No
1. Described types and sources of continuing education programs for an occupation -	____	____
2. Related information to career alternatives -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:

Resources:

Goodman, Jane, Judith Hoopin and Ronald Kent, "Opening the Door to Your Future," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, P. 101.

Duty: Using Employability Skills	**Duty No.** J
	Task No. 20

Task: Analyze career information, using available resources, to identify the opportunities for advancement that exist within an occupation.

Achievement Indicators: The learner:	Yes	No
1. Described the career stages associated with the occupational area:		
a. Listed jobs, entry through advanced levels -	____	____
b. Gave examples of tasks that employees in the occupation are required to perform -	____	____
c. Identified tools/equipment that employees in the occupation use -	____	____
d. Made reference to the relationship of the job(s) to data, people, things -	____	____
e. Made reference to education and/or on-the-job training needed to attain career mobility -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to instructions.

Tools and Equipment:	**Resources:**
	Dictionary of Occupational Titles (D.O.T.). Goodman, Jane, Judith Hoppin and Ronald Kent, "Opening the Door to Your Future," in Opening Doors: A Practical Guide for Job Hunting, Continuum Center, Oakland University, 1984, pp. 99-102. Michigan Occupational Information System (M.O.I.S.)

Duty: Using Employability Skills	**Duty No.** J
	Task No. 21

Task: Describe job resignation/dismissal practice, using knowledge, to identify positive methods for terminating an employment situation.

Achievement Indicators: The learner:

	Yes	No
1. Described practices for resigning from a job:		
a. Gave two weeks to a months notice -	____	____
b. Specified a positive reason for leaving the employment situation -	____	____
2. Described practices for job dismissal (laid off, released):		
a. Asked the employer for a letter of reference, if laid off -	____	____
b. Talked with the employer to discover what was the problem, if released -	____	____

Criteria: Competence in the task will be recognized when the achievement indicators are successfully performed according to the instructions.

Tools and Equipment:	**Resources:** "Knowing the Score," Employability Skills, Guide #10, MSU.

STUDENT ACHIEVEMENT RECORD

HISTOLOGIC TECHNICIAN

STUDENT _____

INSTRUCTIONS:

Mark each student's level of competence according to the following guide:

LEVEL	GUIDE
1	Student has been exposed to task
2	Task accomplished with assistance
3	Task accomplished to criteria by student
4	Ability to teach or demonstrate the task to others

TASK	LEVEL	DATE
A. EMPLOYING LABORATORY SAFETY PROCEDURES		
1. Choose safety supplies.		
2. Use safety equipment.		
3. Follow precautions, to handle hazardous reagents.		
4. Follow precautions, to handle hot materials.		
5. Follow precautions, to handle sharp objects and/or broken glass.		
6. Follow precautions, to prevent contamination.		
7. Store chemicals, to provide personal/environmental protection.		
8. Dispose of waste chemicals.		
B. USING BASIC LABORATORY SKILLS		
1. Clean laboratory glassware.		
2. Choose laboratory glassware.		
3. Perform basic calculations.		

TASK	LEVEL	DATE
B. USING BASIC LABORATORY SKILLS (CONTINUED)		
4. Weigh out chemical reagents.		
5. Measure volume.		
6. Mix chemical reagents.		
7. Measure length.		
8. Identify pH properties, using commercila pH indicator paper.		
9. Identify pH properties, using a pH meter.		
10. Measure temperature.		
11. Check alcohol reagents.		
12. Use a compound microscope.		
13. Clean a compound microscope.		
14. Focus an oil immersion lens.		
C. PERFORMING CLERICAL DUTIES		
1. Receive specimens.		
2. Accession specimens.		
3. Prepare specimens.		
4. File tissue specimens.		
5. Store/discard tissue specimens.		
6. Use telephone/intercom.		
7. Record/maintain inventory of supplies.		
8. Maintains a work load recording system(s).		
D. PERFORMING QUALITY CONTROL PROCEDURES		
1. Record information.		
2. Print/type information.		
3. Record performance of preventive maintenance procedures.		
4. Monitor equipment.		
5. Perform staining procedures.		

TASK	LEVEL	DATE
E. PROCESSING TISSUE SPECIMENS		
1. Fix tissue specimens.		
2. Set up gross dissection area.		
3. Process tissue samples.		
4. Embed tissue samples.		
5. Decalcify tissue specimens.		
F. USING MICROTOMY TECHNIQUES		
1. Sharpen a microtome knife.		
2. Operate the automatic knife sharpener.		
3. Cut paraffin tissue blocks.		
4. Set up flotation water bath.		
5. Set up slide drier/oven.		
6. Freeze/cut tissue samples.		
G. PERFORMING STAINING PROCEDURES		
1. Stain tissue sections.		
2. Coverslop tissue sections under a hood.		
3. Stain frozen tissue section.		
4. Coverslip frozen tissue section.		
5. Stain tissue sections, to demonstrate fats and lipids.		
6. Stain tissue sections, to demonstrate hematological elements.		
7. Stain tissue sections, to demonstrate pigments and minerals.		
8. Stain tissue sections, to demonstrate connective and muscle tissue.		
9. Stain tissue sections, to demonstrate coarbohydrates.		
10. Stain tissue sections, to demonstrate microorganisms.		
11. Stain tissue sections, to demonstrate central nervous system tissue.		
12. Stain tissue sections, to demonstrate silver impregnation techniques.		

TASK	LEVEL	DATE
G. PERFORMING STAINING PROCEDURE (CONTINUED)		
13. Stain tissue sections, to demonstrate special cells and cytoplasm.		
H. PERFORMING CYTO-PREP DUTIES		
1. Package requested cytology kits.		
2. Accession cytology specimens.		
3. File cytology slides.		
4. Determine appropriate method of preparation for making smears.		
5. Prepare non-gynecological body fluids/secretions, using a standard operating procedure manual.		
6. Prepare non-gynecological body fluids/secretions, using a centrifuge.		
7. Prepare non-gynecological body fluids/secretions, using a membrane filter technique.		
8. Stain gynecological/non-gynecological smears.		
9. Coverslip gynecological and non-gynecological smears.		
I. PERFORMING AUTOPSY ASSISTANT DUTIES		
1. Accession autopsy case.		
2. Set up autopsy area.		
3. Provide appropriate instruments.		
4. Weigh/record specimens.		
5. Collect autopsy specimens.		
6. Clean morgue area.		
J. USING EMPLOYABILITY SKILLS		
1. Perform a self-assessment, to compile a list of personal attributes.		
2. Perform a self-assessment, to identify areas of work that will provide personal job satisfaction.		
3. Perform a self-assessment, to determine methods to reduce levels of stress.		

TASK	LEVEL	DATE
J. USING EMPLOYABILITY SKILLS		
4. Compile an occupational profile.		
5. Investigate non-wage job characteristics.		
6. Develop goals.		
7. Perform a job search.		
8. Particpate in an information interview.		
9. Complete a social security form.		
10. Contact a job application.		
11. Complete a job application.		
12. Prepare a resume.		
13. Write a letter.		
14. Demonstrate appropriate dress.		
15. Interview for a job.		
16. Conatct a job interviewer.		
17. Complete forms.		
18. Describe performance evaluation measurements.		
19. Perform a continuing education program search.		
20. Analyze career information.		
21. Describe job resignation/dismissal practice.		

CLASS ACHIEVEMENT RECORD

| NAME | TASK No. | | |

BOARD OF REGISTRY
CERTIFICATION EXAMINATION
ELIGIBILITY REQUIREMENTS

(The requirements and fees stated herein are subject to change without notice.)

The Board of Registry examinations are administered on the third Friday of February and August. The dates of administration for each category are noted with the requirements below. The application fee for the Generalists and Categorical Technologist level is $50.00. The application fee for the Specialist level is $70.00. Applications must be received by the first working day of October for the February examination and the first working day of April for the August examination. The deadline date for the Specialist in Blood Banking examination is July 1 as indicated on the back of the Specialist in Blood Banking application form. Please include your social security number with your application and correspondence. Please contact the Board of Registry office at P.O. Box 12270, Chicago, Illinois, 60612 for application forms and general information.

Note:

Foreign Applicants: If a candidate is basing his/her eligibility on a degree from a foreign university, the official transcript or copy must first be evaluated by the International Education Research Foundation, Inc., P.O. Box 24040, Los Angeles, California, 90024. The evaluation must be submitted with the application for certification examination. The Board of Registry does not accept clinical laboratory experience obtained in a foreign country. Foreign medical technology clinical training programs are recognized as equivalent to one year of full time clinical laboratory experience obtained in the United States and may be applied toward one of the five (5) years required for eligibility for the MT or MLT examinations. The other four years of acceptable clinical laboratory experience must be completed in the United States.

The Education Received from a CAHEA (Committee on Allied Health Education and Accreditation) accredited program is acceptable for a period of five (5) years from the date of completion.

Full Time Experience is defined as a minimum of thirty-five (35) hours per week. Individuals who are currently employed in the area for which they are applying for examination eligibility may be permitted to utilize part-time experience to meet the work experience requirements. Please contact the Board of Registry office for specific information regarding the acceptability of part-time experience prior to applying.

HISTOLOGIC TECHNICIAN, HT(ASCP)

FEBRUARY AND AUGUST

1. Successful completion of a CAHEA accredited Histotechnology program, OR
2. Associate degree or at least 60 semester hours (90 quarter hours) of academic credit from a regionally accredited college/university including 6 semester hours (9 quarter hours) in chemistry and 6 semester hours (9 quarter hours) in biology, AND one year full time acceptable experience in histopathology within the last three years under the supervision of a pathologist (certified by the American Board of Pathology in Anatomic Pathology, or eligible), or an appropriately certified medical scientist, OR
3. High school graduation (or equivalent) AND two years full time acceptable experience in histopathology, within the last five years, under the supervision of a pathologist (certified by the American Board of Pathology in Anatomic Pathology, or eligible), or an appropriately certified medical scientist.

If either part of the HT(ASCP) examination (written or practical component) is passed, it need not be repeated during the next two (2) examination cycles (1 calendar year).

HISTOTECHNOLOGIST, HTL(ASCP)

FEBRUARY ONLY

1. Baccalaureate degree from a regionally accredited college/university with 12 semester hours (18 quarter hours) in chemistry, 16 semester hours (24 quarter hours) in biology, selected from general biology, histology, zoology, anatomy, or physiology; 4 additional semester hours (6 quarter hours) in other unspecified science courses; 3 semester hours (4 quarter hours) in mathematics, AND one year full time acceptable experience in a histopathology laboratory within the last three years. This year of experience must be under the supervision of a pathologist (certified by the American Board of Pathology in Anatomic Pathology, or eligible) or an appropriately certified medical scientist, OR
2. Baccalaureate degree from a regionally accredited college/university including the above course requirements AND successful completion of a CAHEA accredited Histotechnology program.

If either part of the HTL(ASCP) examination (written or practical component) is passed, it need not be repeated during the next two (2) examination cycles.

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HISTOLOGY
TOOL/EQUIPMENT LIST

Science lab, work stations, (with sink, water, gas and power)
Tables, wall type
Base cabinets, countertop (with sink)
Storage cabinets
Chemical storage cabinet
Flame-proof storage cabinet
Instructor demo-unit
Lab stools
Slide file cabinets
Block storage cabinets
Record file cabinet
Fume hood
Distiller
Safety shower
Eye wash
Fire blanket
Fire extinguisher
Refrigerator (with freezer)
Explosion-proof refrigerator
Incubator, complete
Microtome, rotary (with knife)
Microtome, cryostat (with knife)
Microscopes, medical
Automatic tissue processor
Tissue flotation water baths
Electric paraffin dispensers
Paraffin baths
Vacuum infiltrator
Circulating hot air drier
Automatic knife sharpener
Staining sets
Vacuum oven
Laboratory safety equipment (eye goggles, apron, gloves)
Laboratory instruments (celsius thermometer, hydrometer, metric rulers, dissection instruments, coverslip forceps, embedding instruments, camel hair brushes)
Laboratory small equipment (hot plates, forceps warmer, pH meter, triple beam balance, double pan balance, dissecting board, leather knife strop)
Scientific equipment (laboratory glassware, couplin jars, ring stands, glassware racks, tissue cassettes, embedding supplies, specimens containers, carboys, slide racks, microscopic slides and coverglass)

Supplies

Staining rack
Paraplast
Embedding rings
Mold, base
Cryokwik
Forceps
Tissue capsules
Interval timer
Coplin staining jar
Slide trays
Frosted end slides
Camel hair brush
Perforated numbering tags
Chemicals, dyes, reagents
Aqueous mounting media
Gelatin/egg albumin

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HISTOLOGIC TECHNICIAN/HISTOTECHNOLOGIST

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Journal of Histotechnology
Subscription rate $20.00, published quarterly
National Society of Histotechnology
5900 Princess Garden Pkwy., Suite 805
Lanham, MD 20706

Histo-Logic
Subscription-no fee, published quarterly
Williams and Wilkins Co.
428 E. Preston St.
Baltimore, MD 21202

Journal of Histochemistry and Cytochemistry
Subscription rate $88.00, published monthly
Elsevier Science Publishing Co. Inc.
52 Vanderbilt Ave.
New York, NY 10017

Analytical and Quantitative Cytology
Subscription rate $37.00
Science Printers and Publishers Inc.
2 Jacklynn Ct., St. Louis, MO 63132

American Journal of Clinical Pathology
Subscription rate $47.00, published monthly
Journal Fulfillment Department
Lippincott/Harper
2350 Virginia Ave.
Hagerstown, MD 21740

The American Journal of Pathology
Subscription rate $70.00, published monthly
Harpter and Row Publishers
2350 Virginia Avenue
Hagerstown, MD 21740

The American Journal of Surgical Pathology
Subscription rate $69.00, published 8 times per year
Masson Publishing Inc.
20th and Northampton Streets
Easton, PA 18042

Archives of Pathology and Laboratory Medicine
Subscription rate $30.00, published monthly
AMA-circulation div.
535 N. Dearborn Street
Chicago, IL 60610

Diagnostic Histopathology
Subscription rate $175.00, published quarterly
John Wiley & Sons
Baffins Lane, Chichester,
Sussex PO19 1UD, England

JOURNALS AND PUBLICATIONS (continued)

Human Pathology
Subscription rate $57.00, published monthly
W.B. Saunders Company
W. Washington Square
Philadelphia, PA 19105

Immunohistochemistry
Subscription rate $66.00, published monthly
Biomedical Information Service
University, Sheffield S10 2TN England

Journal of Clinical Pathology
Subscription rate $124.00, published monthly
British Medical Journal
1172 Commonwealth Ave.
Boston, MA 02134

The Journal of Laboratory and Clinical Medicine
Subscription rate $73.00
C.V. Mosby Company
11830 Westline Industrial Drive
St. Louis, MO 63146

The Journal of Pathology
Subscription rate $70.00, published monthly
Longman Group Limited
4th Ave.
Harlow, Essex, CM19 5AA

Laboratory Investigation
Subscription rate $25.00, published monthly
International Academy of Pathology
428 E. Preston St.
Baltimore, MD 21202

Laboratory Medicine
Subscription rate $22.00, published monthly
ASCP
Laboratory Medicine
2100 W. Harrison St.
Chicago, IL 60612

Laboratory Management
Subscription rate $15.00, published monthly
Laboratory Management
475 Park Ave. South
New York, NY 10016

Lab World
Subscription rate $18.00, published monthly
Lab World
P.O. Box 13879
Philadelphia, PA 19101

JOURNALS AND PUBLICATIONS (continued)

MLO-Medical Laboratory Observer
Subscription rate $36.00, published monthly
MLO
Box 543
Oradell, NJ 07649

Technical Photography
Subscription rate $10.00, published monthly
PTN Publishing Corp.
101 Crossways Park West
Woodbury, NY 11797

MEDICAL PUBLISHERS

Academic Press
111 5th Ave.
New York, NY 10003
212-741-6800

Addison Wesley Publishing
2725 Sand Hill Rd.
Menlo Park, CA 94025
617-944-3700

American Society of Clinical Pathologists
2100 W. Harrison
Chicago, IL 60612
312-738-1336

Appleton-Century-Crofts
292 Madison Ave.
New York, NY 10017
212-532-1700

Bio-Science Enterprises
7600 Tyrone Ave.
Van Nuys, CA 91405

Butterworth Publishing
10 Tower Office Park
Woburn, MA 01801

MEDICAL PUBLISHERS (continued)

Charles C. Thomas
2600 S. First St.
Springfield, IL 62717
217-789-8980

Churchill-Livingstone Inc.
1560 Broadway
New York, NY 10036
212-921-0430

C.V. Mosby Company
11830 Westline Industrial Drive
St. Louis, MO 63141
314-872-8370

Harper and Row
10 E. 53rd St.
New York, NY
212-593-7000

Houghton Mifflin
2 Park St.
Boston, Ma 02107
617-725-5000

John Wiley and Sons
605 3rd Avenue
New York, NY 10158
212-856-6418

J.B. Lippincott Co.
6 Winchester Terrace
New York, NY 10022
212-593-7000

Krieger Publishing
P.O. Box 9542
Melbourne, FL 32901
305-724-9542

Lea and Febiger
600 Washington Square
Philadelphia, PA 19106
215-922-1330

Little, Brown & Company
34 Beacon Street
Boston, MA 02106
617-227-0730

Masson Publishing
133 E. 58th St.
New York, NY 10022
212-838-8510

McGraw-Hill Book Company
1221 Ave. of the Americans
New York, NY 10022
212-997-1221

Mosaic Press
P.O. Box 41502
Tucson, AZ 85717

Oxford University Press
200 Madison Avenue
New York, NY 10016
212-679-7300

Prentice Hall
Route 9w
Englewood Cliffs, NJ 07632
201-592-2000

S. Karger
150 Fifth Ave., Suite 1105
New York, NY 10011
212-924-9222

W.B. Saunders Company
West Washington Square
Philadephia, PA 19105
215-574-4800

W.H. Freeman and Company
660 Market Street
San Francisco, CA 94104

Williams and Wilkins Company
428 E. Preston Street
Baltimore, MD 21202
301-528-4221

Year Book Medical Publishers
35 E. Wacker Drive
Chicago, IL 60601
1-800-621-9746

STUDY AIDS FOR HISTOTECHNOLOGY

Histologic Techniques in Electron Microscopy

by Frieda Carson, Ph.D.
American Society for Medical Technology
330 Meadowfern
Houston, TX 77067

ASMT member $5.00
Non-member $7.00

Immunohistochemistry Workshop Syllabus and Glycol Methacrylate Embedding and Staining

by Sharon Van de Velde
1518 Flipper Court
Anaheim, CA 92802

Knife Sharpening Made Easy

by Richardson, Judge, Sugulas
#1319
American Society for Medical Technology
330 Meadowfern
Houston, TX 77067

ASMT member $7.00
Non-member $15.00

Teach and Test Flashcard Set

by Ann Preece
$7.00
Ann Preece, H.T.
Pathology Medical Group
P.O. Box 1989
La Jolla, CA 92037

"TOADS"

by Barbara B. Hrapchak
Ohio State University

"TOADS" is a tutorial presentation and review of special histologic stains divided into modules according to the type of tissue components being stained. For more information on "TOADS" or other programs, please contact:

CAI Users Services
Ohio State University
Division of Computing Services for Medical Education and Research
076 Health Sciences Library
376 West Tenth Avenue
Columbus, Ohio 43210
(614) 422-6192

NSH EDUCATIONAL MATERIALS

Study Sets

The following study sets are available for loan from the National Society for Histotechnology:

#821 - Metric System of Linear Measure

#822 - Volume and Mass

#823 - Conversion - English to Metric - Vice Versa

#824 - Density & Specific Gravity

#825 - Temperature

#851 - Electron Configuration & Orbital Diagrams

#852 - Atomic Structure and the Periodic Table: An Introduction

#853 - Electrical Forces Within Atoms

These side sets consist of a workbook, 2 x 2's and a tape, except set #852 and #853 which subsitute a film for the 2 x 2's. The study sets are available for rental only. The loan period is one month.

Postage/handling & loan fees: NSH members $5.00
Non-members $20.00

Establishing Knowledge Parameters

This training aid includes a wide variety of subjects dealing with histological procedures and a means of determining personal scope of knowledge in the field of histotechnology on a self-assessment basis.

The training aid consists of forty 2 x 2 photomicrographs to be used in conjunction with questions in Part 1. Part 2 is a series of questions relative to the field. Following, there is an Answer/Discussion section for Part 1 and 2.

This training aid is available on a rental or purchase basis. Prior to rental or purchase, the order form must be completed and the "Conditions of Loan" agreed upon. Forms may be received from the NSH office, or call Roberta Mosedale, Executive Secretary, (301) 577-4907.

Rental - $50.00 NSH member
$75.00 Non-member

Purchase - $150.00 NSH member
$250.00 Non-member

National Society for Histotechnology
5900 Princess Garden Pkwy., Suite 805
Lanham, MD 20706

NSH EDUCATIONAL MATERIALS (continued)

Histotechnology in Depth

These cassette tapes and handout materials were prepared by Dale Largent to aid individuals prepare for the HT and HTL examinations.

1/1 - Instrumentation, Fixation

1/2 - Processing, Microtomy

2/1 - Microtomy, Staining

2/2 - Staining, Staining

3/1 - Staining, Staining

3/2 - Staining, Staining

4/1 - Decalcification

4/2 - Decalcification, Basic Chemistry

5/1 - Basic Chemistry

5/2 - Basic Chemistry, Medical Terms

The cassette tapes are for rental only. The loan period is two weeks.

Career Brochures

These brochures have been prepared to assist you in evaluating the primary objectives of a histologist. Histotechnology is a structural science concerned with the demonstration of cellualr morphology, chemical composition, and function of normal and abnormal tissue.

Postage & Handling fees: "The Art & Science of Histotechnology, A Career to Consider"
$5.00 per 25 copies

"Your Career as a Histotechnologist"
$5.00 per 50 copies

NSH External Degree Program Study Guides

NSH in cooperation with Thomas A. Edison State College have developed courses and TECEP (Thomas Edison College Examination Program) awarding credits which apply towards an Associate in Arts degree with emphasis in histotechnology at Thomas A. Edison State College. Presently NSH is developing three more courses toward a baccalaureate degree at the college. Listed below are the study guides for an AA degree with emphasis in Histotechnology and correspond with the required textbook. Please note that the text must be purchased separately.

"Introductory Histotechnology/Histochemistry"
Text: Theory and Practice of Histotechnology, 2nd ed., by D.C. Sheehan & B.B. Hrapchak. The C.V. Mosby Co., St. Louis, 1980.

"Human Microscopic Anatomy"
Text: Functional Histology, by P.R. Wheater, H.G. Burkitt, & V.G. Daniels. Churchill-Livingstone, NY, 1979.

NSH External Degree Program Study Guides (continued)

"Current Techniques of Diagnostic Histopathology"
Text: Basic Techniques in Diagnostic Histopathology, by A. Kennedy. Churchill-Livingstone, NY, 1977.

Postage/handling fees: $5.00 each

Please send requests to:

National Society for Histotechnology
5900 Princess Garden Pkwy, Suite 805
Lanham, MD 20706
(301) 577-4907

VISUAL AND AUDIO AIDS

Color Filmstrip to Supplement "Histology" - by Thomas S. Leeson and C. Roland Leeson

Filmstrip I - 50 frames
Filmstrip II - 50 frames
$15.00
W.B. Saunders Company
West Washington Square
Philadelphia, PA 19105

Color Prints made from Kodak - Kodachrome - 25 color film for photomicrography

Establishing Knowledge Parameters in Histotechnology

Self-assessment training aid
Forty 2 x 2 photomicrographs

National Society for Histotechnology
5900 Princess Garden pkwy., Suite 805
(310) 577-4907

Fisher Safety Films

Stars Jack Klugman of "Quincy"
14 minutes color/sound film available on free loan on 16mm film or video tape.
May also be purchased outright - write to:

Audio/Visual Department
Fisher Scientific Co.
711 Forbes Avenue
Pittsburg, PA 15219

"28 Grams of Prevention"

16mm movie film $155.00
May also be rented. See or write your:

Fisher Scientific Company Representative

VISUAL AND AUDIO AIDS (continued)

"Legionnaires Disease"

Audiotape x 2
American Society for Medical Technology
330 Meadowfern
Houston, TX 77067

Histotechnology Continuing Education via the Teleconference

Network of Texas
University of Texas Health Science Center
San Antonio, TX

I. Microscopic Anatomy for Technologists
II. Histotechnologists Review and Update - includes tape and 35mm photomicrographs - Approximately $25.00 per set

Teleconference Network of Texas
Office of Continuing Education Services
7703 Floyd Curl Drive
San Antonio, TX 78284
(512) 691-7291

"Practical Histology: A Self-Instructional Laboratory Manual in Filmstrip"
by Leeson and Leeson

4 color filmstrips - $45.00
pap. $7.50
W.B. Saunders Company (1973)

Safety in the Clinical Laboratory

Audio tape by Richard J. Henry, M.D.
Bio-Science Laboratories
Main Laboratory
7600 Tyrone Avenue
Van Nuys, CA 91405

Safety Pipeting

16mm Movie
National Audio Visual Center
General Services Administration
M-1160

Tech Sample Program Histotechnology

Package (6 exercises) for 1979, 1980, 1981, 1982, 1983
Cat. No. 30-1-179, 30-1-180, 30-1-181, 30-1-182, 30-1-183
Member $20.00 Non-member $35.00

American Society of Clinical Pathologists
Dept. No. VT66D
P.O. Box 12073
Chicago, IL 60612

VISUAL AND AUDIO AIDS (continued)

"The Art and Science of Histotechnology - A Visit to the Laboratory"

Career Awareness Film
16mm movie film or 3/4' video cassette

National Society for Histotechnology
5900 Princess Garden Pkwy., Suite 805
Lanham, MD 20706
(301) 577-4907

"Theory and Application of Tissue Embedding in the Histopathology Laboratory"

Tissue-Tek II Embedding Films
16mm movie film $125.00

M.D. Anderson Hospital and Tumor Institution
Medical Communications
6723 Bertner
Houston, TX 77025

Thin Is In - by Burns and Bretschneider

57 - 35mm slides on embedding of tissue for light microscopy
American Society of Clinical Pathologists
Educational Products Division
2100 W. Harrison Street
Chicago, IL 60612

The following films are available for purchase (prepaid) in 16mm color, Sony U-Matic videotape cartridge, or Super 8mm in Fairchild cartridge. Rental copies are available.

- Cytopreparation with Micro Slides; 15 min.
- Cytopreparation with Membrane Filters; 20 min.
- Fixation in Diagnostic Cytology; 9.3 min.
- Papanicolaou Stain: Principles; 15 min.
- Papanicolaou Stain: Materials and Methods; 21 min.
- Coverslipping in Diagnostic Cytology; 8.7 min.
- Sputum Specimens: Collection and Preparation; 17 min.
- Bronchial Specimens: Collection and Preparation; 9.3 min.

Health and Education Resources, Inc.
4733 Bethesda Ave., Suite 735
Bethesda, MD 20014

SELF-STUDY COURSES from the UNIVERSITY of TEXAS HEALTH SCIENCE CENTER

Self-Study Courses from the University of Texas Health Science Center at San Antonio include audio cassette tapes with slides and printed study guides as listed below. Tapes are of live broadcasts via the Teleconference Network of Texas and include participants' questions and comments.

You receive five study guides with each package ordered, so laboratory personnel can take their own notes while listening to the tapes.

Videotapes from the 1980 "Third Annual Continuing Education Seminar" at the University of Texas Health Center at San Antonio are also available.

Please allow 6 weeks for delivery.

Self-Study Courses

Method of Processing, Sectioning and Staining, and Application of Mineralized Sections of Bone - Antonio B. Villaneuva, H.T. (ASCP)
- 3 page study guide and 32 slides

Self-Assessment of Fungi - Part I and II - Gerre G. Wells, H.T. (ASCP)
- 15 page study guide and 85 slides

An Evaluation of Elastic Tissue Staining - Coranelle Lambert, H.T. (ASCP)
- 16 page study guide and 43 slides

A Modified Knife Sharpening Technique for Microtome Knife Sharpeners - Lyn Richardson, B.A., H.T. (ASCP)

Histotechnology and the Forensic Pathologist - Frederick B. Jordan, M.D.
- 6 page study guide and 54 slides

Bone Marrow: How, Why and the Results - Dale Van Wormer, M.D.
- 7 page study guide and 29 slides

Cost Accounting - Part I & II - Helen Futch, M. Ed., H.T. (ASCP)
- 24 page study guide

Carbohydrate Histochemistry - Tom Palmer, Ph. D.
- 12 page study guide and 8 slides

The Chemistry of Hematoxylin and Eosin Staining - Part I & II - Jules Elias, Ph.D.
- 29 page study guide and 8 slides

Formalin Pigment - Nita Searcy, H.T. (ASCP)
- 6 page study guide and 37 slides

Laboratory Quality Control Data - Sue Judge, H.T. (ASCP)
- 8 page study guide and 37 slides

Histologic Techniques in Opthalmic Pathology - Carmen Berlanga, H.T.
- 3 page study guide and 67 slides

Physical & Chemical Parameters That Affect Special Staining - Part I & II - John P. Koski, B.S.
- 11 page study guide

Method of Immunofluorescence - Richard L. DeVillez, M.D.
- 6 page study guide and 8 slides

Quality Control in Decalcification - Beverly Grice, H.T. (ASCP)
- 3 page study guide

The Chemistry of Staining - Part I - Fran Eiserich
- 8 page study guide

The Chemistry of Staining - Part II - Fran Eiserich
- 12 page study guide

Self-Study Courses (continued)

The Chemistry of Staining - Part III - Fran Eiserich
- 8 page study guide

The Chemistry of Staining - Part IV - Fran Eiserich
- 8 page study guide

The Chemistry of Staining - Fran Eiserich
- four 1 hour tapes and four study guides

Technical Procedures & Staining Methods for Renal Biopsies - Maria Sugulas, H.T. (ASCP)
- 5 page study guide and 12 slides

Vacuum Processing for Small Biopsies - Joyce Moore, H.T. (ASCP)
- 5 page study guide and 12 slides

Immunoperoxidase for Hepatitis B Surface Antigen - Sharon C. Lear, H.T. (ASCP)
- 8 page study guide and 17 slides

Immunochemistry - Damon C. Herbert, Ph.D.
- 2 page study guide and 16 slides

Modified Processing and Sectioning Techniques for Hard Tissues - Lyn Richardson, B.A., H.T. (ASCP)
-3 page study guide and 36 slides

The Use of Heat for Rapid Manual Processing of Tissue - Jaye Sanford, H.T. (ASCP)
- 6 page study guide and 14 slides

How Specific are "Specific Histologic Staining Methods?" or "What's in a Stain?" - C.F.A. Culling, M.D.
- 12 page study guide

Physical and Chemical Parameters that Affect Silver Nitrate Stains - John P. Koski, B.S.
- 11 page study guide

Transmission Electron Microscopy - Part I & II - William B. Winborn, Ph.D.
- 7 page study guide and 56 slides

Immunology for Histotechnologists - Part I & II - Jules M. Elias, Ph.D.
- 16 page study guide

Trouble Shooting Special Stains - Coranelle Lambert, H.T. (ASCP)
- 3 page study guide and 52 slides

T.S. - A Histotech's Nightmare - Eric F. Glassy, M.D.
- 80 slides

Histology of the Pineal Gland - Russel J. Reiter, Ph.D.
- 20 page study guide and 15 slides

Self-Study Courses (continued)

Correlation of Scanning Electron Microscopy and Transmission Electron Microscopy for the Clinical Laboratory - Nadine Chowning, M.T., H.T. (ASCP)
- 8 page study guide and 100 slides

"What the !?&! Do I Do With This?" or Problem Solving Applied to the Histopathology Laboratory - Maria Sugulas, H.T. (ASCP)
- 5 page study guide and 42 slides

Microscopic Anatomy Correlated with Pathology of the Gastrointestinal Tract - Frank J. Weaker, Ph.D and James P. Robinson, M.D.
- 13 page study guide and 105 slides

Self-Assessment of Fixation, Processing, Cutting of Sections, and Hematoxylin & Eosin Staining - Gerre G. Wells, H.T. (ASCP)

Bone Decalcification Occuring from Fixation in 10% Formalin of Varying pH's - James Robinson, B.S., H.T. (ASCP)
- 2 page study guide

Viral Cytopathology - It's Practical Application - Hubert H. Malherbe, M.B., B.CH., M.D. and Margaret Strickland-Cholmey
- 8 page study guide and 29 slides

Comparative Cytology - Jeffie F. Roszel, V.M.D., Ph.D.
- 5 page study guide and 20 slides

Plastic Techniques - Sara Lee
- 2 page study guide

History and Manufacturing of Dyes - Part I & II - John P. Koski, B.S.
- 13 page study guide and 29 slides

Do's and Don'ts Histologically - Gerre G. Wells, H.T. (ASCP)
- 8 page study guide and 71 slides

Alcian Yellow for Mucin - Maria Sugulas, H.T. (ASCP)
- 2 page study guide and 35 slides

Connective Tissue Stains - Paul Bradbury
- 12 page study guide and 20 slides

Videotapes

Connective Tissue Proper - Frank J. Weaker, Ph.D.

Histologic Techniques in Opthalmic Pathology - Carmen Berlanga, H.T. (ASCP)

Do's and Don'ts Histologically - Gerre G. Wells, H.T. (ASCP)

Scanning Electron Microscopy - Nancy K. Smith, Ph.D.

Immunocytochemistry - Damon C. Herbert, Ph.D.

Self-Study Courses and Videotapes (continued)

Please send requests to: Teleconference Network of Texas
Office of Continuing Education Services
7703 Floyd Curl Drive
San Antonio, Texas 78284

or call to request self-study courses, videotapes, and prices: (512) 691-7291